

# Exhibit 1

to August 22, 2022 Declaration of  
Nicholas Matuschak

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

ALI KARIMI, Individually and On Behalf of All  
Others Similarly Situated,

Plaintiffs,

*- against -*

DEUTSCHE BANK AKTIENGESELLSCHAFT, JOHN  
CRYAN, AND CHRISTIAN SEWING,

Defendants.

**Case No. 1:22-cv-02854-JSR**

**EXPERT REPORT OF VINITA JUNEJA**

**AUGUST 22, 2022**

## Contents

List of Exhibits .....	ii
List of Appendices.....	iii
I. Introduction.....	4
A. Qualifications .....	4
B. Materials Considered.....	6
C. Remuneration .....	6
II. Background.....	6
A. Company Background.....	6
B. Overview of Allegations .....	7
1. Alleged Misrepresentations .....	8
2. Alleged Corrective Disclosures .....	13
III. Summary of the Nye Report.....	18
A. Analysis of Market Efficiency .....	18
B. Correlation of U.S. and German Trading.....	18
C. The Nye Report States Damages Can Be Shown on Class-Wide Basis Using the Alleged Corrective Disclosures.....	19
IV. Methodology Used to Establish Price Impact .....	20
A. Observation of Price Impact for Misrepresentations and Corrective Disclosures.....	20
B. The Use of Event Studies to Show Price Impact .....	21
V. The Alleged Misrepresentations Do Not Have Any Price Impact .....	23
A. Each Corrective Disclosure Is Statistically Insignificant.....	23
B. Analyst Commentary of and other Market Response to the Alleged Corrective Disclosures .....	26
1. Analyst commentary following the alleged corrective disclosure on Wednesday, May 13, 2020 .....	27
2. Analyst commentary following the alleged corrective disclosure on Wednesday, June 24, 2020 .....	27
3. Analyst commentary following the alleged corrective disclosure on Friday, June 26, 2020 .....	28
4. Analyst commentary following the alleged corrective disclosure on Tuesday, July 7, 2020.....	29

5.	Analyst commentary following the alleged corrective disclosure on Thursday, July 9, 2020 .....	30
6.	Analyst commentary following the alleged corrective disclosure on Monday, July 13, 2020 .....	30
a)	The Alleged Corrective Disclosures on July 13, 2020 Could Not Be Evidence of Price Impact.....	31
7.	Analyst commentary following the alleged corrective disclosure on Tuesday, July 28, 2020 .....	31
8.	Analyst commentary following the alleged corrective disclosure on Wednesday, September 9, 2020 .....	33
9.	Analyst commentary following the alleged corrective disclosure on Sunday, September 20, 2020 .....	33
a)	The Alleged Corrective Disclosure on September 20, 2020 Could Not Be Evidence of Price Impact.....	34
10.	Analyst commentary following the alleged corrective disclosure on Tuesday, September 22, 2020 .....	34
C.	Analysis of Market Reaction at the Time of the Alleged Misrepresentations Offers No Evidence that They Had Price Impact.....	35
VI.	The Lack of Price Impact Means that the Class Is Not Damaged.....	37

## List of Exhibits

Exhibit 1.	Deutsche Bank Closing Price.....	8
Exhibit 2.	Alleged Misrepresentations.....	10
Exhibit 3.	Deutsche Bank Stock Price Reactions Following the Alleged Corrective Disclosure.....	23
Exhibit 4.	Deutsche Bank Stock Price Reactions Following the Alleged Misrepresentations .....	35

## **List of Appendices**

Appendix I. CV of Vinita Juneja

Appendix II. Materials Relied Upon

Appendix III. Calculation of Exchange Volume

Appendix IV. Summary of Market-Adjusted Price Reactions on the Xetra Exchange on Alleged Disclosure Dates

Appendix V. Summary of Market-Adjusted Price Reactions on the NYSE on Alleged Disclosure Dates

Appendix VI. Summary of Market-Adjusted Price Reactions on the Xetra Exchange on Alleged Misrepresentation Dates

Appendix VII. Summary of Market-Adjusted Price Reactions on the NYSE on Alleged Misrepresentation Dates

## I. Introduction

1. I have been retained by counsel to Deutsche Bank Aktiengesellschaft (“**Deutsche Bank**” or “**DB**”), John Cryan, and Christian Sewing to review the Plaintiffs’ allegations as set forth in the Third Amended Class Action Complaint, dated June 30, 2022 (the “**Complaint**” or “**Third Amended Complaint**”)<sup>1</sup>, the price impact of the Plaintiffs’ set of alleged misrepresentations and alleged corrective disclosures, and to review and comment on the Expert Report of Zachary Nye, Ph.D. filed on July 18, 2022 (the “**Nye Report**”).<sup>2</sup>
2. As explained in greater detail below, my principal conclusions are:
  - a. The alleged misrepresentations did not have an impact on the price of Deutsche Bank’s shares.
  - b. If one were to use the methodology and statistical models contained in the Nye Report for computing class-wide damages, the class-wide damages would be zero.
3. My opinions are subject to revision based on new information (including new reports or testimony by Plaintiffs’ proffered experts or other evidence in this matter) that may subsequently come to my attention.

### A. Qualifications

4. I am a Managing Director at NERA Economic Consulting (“NERA”) and the Chair of NERA’s Global White Collar, Investigations, & Enforcement Practice. From 2006 through 2009, I was the Chair of NERA’s Global Securities and Finance Practice. NERA, a firm established over 60 years ago, employs about 500 people in over 20 offices worldwide. NERA employs a research staff of professionals with degrees in economics, finance, accounting, mathematics, and related disciplines. Our clients

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<sup>1</sup> Third Amended Class Action Complaint for Violations of the Federal Securities Laws, *Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.*, Southern District of New York District Court, Case No. 22-cv-2854 (JSR), June 30, 2022.

<sup>2</sup> Expert Report of Zachary Nye, Ph.D., *Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.*, Southern District of New York District Court, Case No. 22-cv-2854 (JSR), July 18, 2022.

include regulators, risk managers, principals requiring valuation services, and parties involved in disputes resulting in litigation, mediation, and arbitration.

5. I have a B.A. (Honors) in economics from the University of Western Ontario, now known as Western University. I also have an M.A. and a Ph.D. in economics from Harvard University. I have taught courses in economics and business regulation and I have lectured at the graduate and undergraduate level at Western University. My publications include chapters in books on the topics of financial litigation, arbitration, and event studies. I have authored papers on the extent and nature of shareholder claims. I also have served as an arbitrator for the Financial Industry Regulatory Authority and its predecessor, the National Association of Securities Dealers (NASD). I have testified at trials and depositions and I have submitted expert affidavits in both state and federal courts in the United States. I have also appeared as an expert witness in Canadian courts and in arbitrations before the New York Stock Exchange, NASD, the American Arbitration Association, the ICC International Court of Arbitration, the London Court of International Arbitration, and the Judicial Arbitration and Mediation Services, among others. I have also presented my findings to regulators, such as the U.S. Securities and Exchange Commission in the course of enforcement related investigations.
6. My testimony, affidavits, reports, analyses, and depositions have covered numerous economic and statistical issues arising in numerous securities, financial economics, and valuation-related lawsuits, regulatory investigations, and disputes. Subjects covered in my testimony, affidavits, reports, analyses, and depositions include: issues related to statistical analyses, financial valuation, damages, and issues related to various kinds of funds and securities. My work frequently involves assessing the impact of misrepresentations on securities' prices as well as assessments relevant to the materiality of information. I have worked on many matters involving an analysis of price impact, market efficiency, and the calculability of damages. I have spoken frequently on the topics of the impact of information on a securities' price, damages, valuation, event studies, shareholder litigation, and derivative actions to audiences

including risk managers, regulators, executives from publicly traded corporations, insurance industry participants, and lawyers.

7. My curriculum vitae is attached as Appendix I. Other professionals employed by NERA assisted me in preparing this declaration. Throughout this process, these professionals worked under my supervision and review.

## **B. Materials Considered**

8. The list of materials considered in forming the opinions expressed in this report are listed as Appendix II. I reserve the right to supplement this report if additional relevant information comes to my attention.

## **C. Remuneration**

9. NERA is being compensated for its time at various hourly rates and its out-of-pocket expenses at cost. NERA's hourly rate for my time is currently \$1,050. The rates charged by NERA personnel working at my direction on this matter range from \$165 to \$1,100 per hour. NERA's compensation is not contingent upon the nature or substance of my findings or on the outcome of this matter.

# **II. Background**

## **A. Company Background**

10. Deutsche Bank is a publicly traded corporation organized under German law founded in 1870.<sup>3</sup> At the beginning of the alleged Class Period, Deutsche Bank described itself as “a leading European bank with a global reach supported by a strong home base in Germany, Europe's largest economy” that “serve[s] the real economy needs of our corporate, institutional, asset management and private clients, providing services in transaction banking, corporate finance and capital markets, assets management, wealth management and retail banking.”<sup>4</sup>

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<sup>3</sup> Deutsche Bank Aktiengesellschaft Form 20-F for the fiscal year ended December 31, 2016, filed March 20, 2017, p. 48.

<sup>4</sup> Deutsche Bank Aktiengesellschaft Form 20-F for the fiscal year ended December 31, 2016, filed March 20, 2017, p. 49.



11. Throughout the alleged Class Period, Deutsche Bank’s Global Registered Shares (referred to below as “common shares” or just “shares”) were listed on the New York Stock Exchange (“NYSE”) and on the German Frankfurt Stock Exchange (“Xetra”).”<sup>5</sup>

## **B. Overview of Allegations**

12. Plaintiffs claim that the price of Deutsche Bank’s securities was inflated between March 14, 2017 and September 18, 2020 (i.e., the alleged Class Period) as a result of Deutsche Bank’s alleged misrepresentations.<sup>6</sup>

13. As shown in ¶20 of the Nye Report, an average of 75% of the trading in Deutsche Bank’s common shares on the Xetra exchange and in the US during the alleged Class Period took place on the Xetra exchange.<sup>7</sup> My calculations confirm this number.<sup>8</sup> Unless noted otherwise, I will reference prices from that exchange in this report.

14. Deutsche Bank’s daily closing price and trading volume of common shares on the Xetra exchange from March 14, 2017 to September 18, 2020, along with the dates of alleged misrepresentations and alleged corrective disclosures (as alleged in Plaintiffs’ Complaint), are shown in Exhibit 1 below.<sup>9</sup> The twenty alleged misrepresentation dates are shown in purple and the ten alleged corrective disclosure dates are shown in orange.

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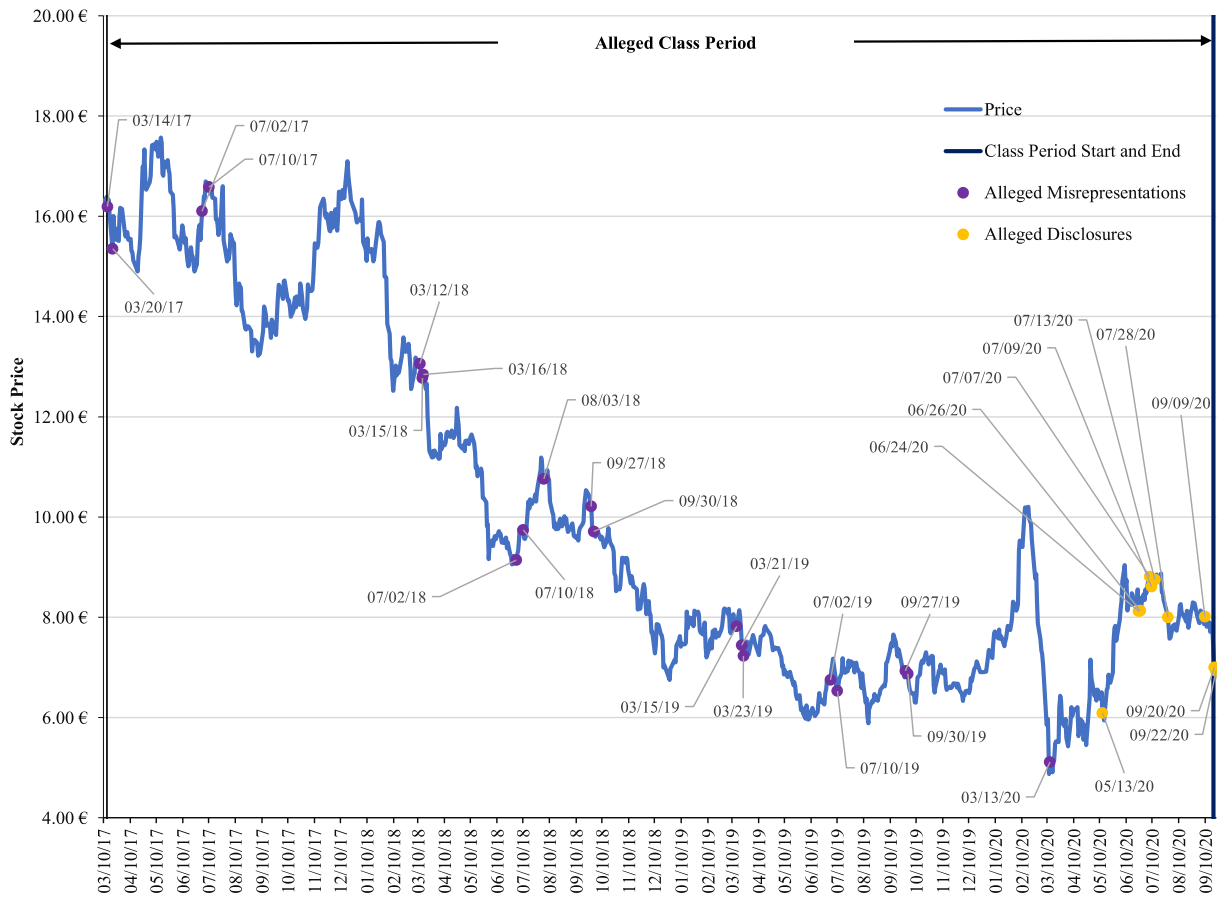
<sup>5</sup> Deutsche Bank Aktiengesellschaft Form 20-F for the fiscal year ended December 31, 2016, filed March 20, 2017, p. 102 and “Share Information,” [https://investor-relations.db.com], 2022. Xetra is the electronic marketplace for the Frankfurt Stock Exchange.

<sup>6</sup> Third Amended Complaint, ¶¶1, 12-13. Plaintiffs refer to “securities” throughout the Complaint although only Deutsche Bank’s common shares are specifically discussed. I assume that the allegations are restricted to just the common shares of Deutsche Bank.

<sup>7</sup> Nye Report, ¶20.

<sup>8</sup> See Appendix III.

<sup>9</sup> Third Amended Complaint, ¶¶137-176, 179-203.

Exhibit 1. *Deutsche Bank Closing Price*

**Notes and Sources:** Data are from FactSet Research Systems, Inc. Dates of alleged misrepresentations and disclosures are taken from the Third Amended Complaint, ¶¶137-176, 179-203. For dates of alleged misrepresentations and disclosures that are not trading days, the closing price from the subsequent trading day is shown.

## 1. Alleged Misrepresentations

15. Summarized below are the alleged misrepresentations contained in the Complaint.

16. Plaintiffs claim that Defendants made a series of public statements and filings during the alleged Class Period regarding the effectiveness of Deutsche Bank’s Know Your Customer (“KYC”) processes that were “materially false and misleading.”<sup>10</sup> Plaintiffs claim that these statements were materially false and misleading because high-net-

<sup>10</sup> Third Amended Complaint, ¶4.

worth individuals and politically exposed persons (“**PEPs**”) were allegedly “repeatedly” exempted from “any meaningful due diligence.”<sup>11</sup>

17. While I have not comprehensively verified the first dates that the alleged misrepresentations were made public, at least one of these occurs before the beginning of the class period. The plaintiffs allege that a statement posted on Deutsche Bank’s website “on or around July 2, 2017” was a misrepresentation.<sup>12</sup> The statement cited in the Complaint reads as follows:

Compliance: Conformity with the law and adherence to regulations and standards. [...] How we assess and accept clients: We have developed effective procedures for assessing clients (Know Your Customer or KYC) and a process for accepting new clients in order to facilitate comprehensive compliance. Furthermore they help us to minimize risks relating to money laundering, financing of terrorism and other economic crime. Our KYC procedures start with intensive checks before accepting a client and continue in the form of regular reviews. Our procedures apply not only to individuals and corporations that are or may become our direct business partners, but also to people and entities that stand behind them or are indirectly linked to them.<sup>13</sup>

In fact, the Internet Archive indicates that this statement was on Deutsche Bank’s website as early as April 19, 2014, well before the beginning of the alleged Class Period.<sup>14</sup> The date given in the Complaint appears to be based on a snapshot of Deutsche Bank’s website taken by the Internet Archive on July 2, 2017.<sup>15</sup>

18. According to the Plaintiffs, there are alleged misrepresentations on 20 different days (affecting 20 different trading days), as summarized in Exhibit 2 below.

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<sup>11</sup> Third Amended Complaint, ¶5.

<sup>12</sup> Third Amended Complaint, ¶¶142-143.

<sup>13</sup> Third Amended Complaint, ¶142.

<sup>14</sup> “Compliance: Conformity with the law and adherence to regulations and standards,” [<https://web.archive.org/web/20140419162138/https://www.db.com/cr/en/concrete-compliance.htm>]. Accessed via the Internet Archive, archive date April 19, 2014.

<sup>15</sup> “Compliance: Conformity with the law and adherence to regulations and standards,” [<https://web.archive.org/web/20170702230115/https://www.db.com/cr/en/concrete-compliance.htm>]. Accessed via the Internet Archive, archive date July 2, 2017.

Exhibit 2. *Alleged Misrepresentations*

	<b>Complaint Paragraph</b> (1)	<b>Date of Release</b> (2)	<b>Release</b> (3)	<b>Alleged Misrepresentation</b> (4)
1.	137-138	Tuesday, 3/14/2017	Annual Report 2016	“We are exiting client relationships where we consider . . . risks to be too high while also strengthening our client on-boarding and know-your client (KYC) procedures.”
2.	139-141	Monday, 3/20/2017 2:27 PM CET	Form 20-F 2016	“Major achievements in 2016 included . . . Substantial investment in our control functions, including the ongoing implementation of a more comprehensive Know-Your-Client (KYC) process and an off-boarding process for higher risk clients. [...] We are exiting client relationships where . . . risks are too high while also strengthening our client on-boarding and KYC procedures.”
3.	142-143	Sunday, 7/2/2017	Website as at 7/2/2017	“Compliance: Conformity with the law and adherence to regulations and standards. How we assess and accept clients: We have developed effective procedures for assessing clients (Know Your Customer or KYC) and a process for accepting new clients in order to facilitate comprehensive compliance. Furthermore they help us to minimize risks relating to money laundering, financing of terrorism and other economic crime [...] Our procedures apply not only to individuals and corporations that are or may become our direct business partners, but also to people and entities that stand behind them or are indirectly linked to them.”
4.	144-145	Monday, 7/10/2017	Website as at 7/10/2017	“DB has developed and implemented a comprehensive set of measures to identify, manage and control its AML risk. These measures are: A robust and strict KYC program [...] to ensure all kinds of customers (natural or legal persons or legal structures, correspondent banks) are subject to adequate identification, risk rating and monitoring measures. [...] Special safeguards are implemented for business relationships with politically exposed persons (PEPs) and clients from countries or industries deemed high risk.”

5.	146-151	Monday, 3/12/2018	Non-Financial Report 2017; Annual Financial Statements and Management Report 2017	Bank's newly-implemented KYC program "pay[s] special attention to high-risk clients (such as politically exposed persons [PEP]) ... Clients are assessed as part of due diligence and are regularly screened against internal and external criteria[...] [a]ssessing and understanding client-related money laundering and terrorist financing risks is a critical component of our AFC Risk Management framework [...] Our risk rating methodology considers the following aspects of each client relationship to determine a Client Risk Rating: country risk, industry risk, product risk, and entity type risk."
6.	152-153	Thursday, 3/15/2018	Annual Report 2017	"We are exiting client relationships where we consider . . . risks to be too high while also strengthening our client on-boarding and know-your client (KYC) procedures." <i>(Identical to #1)</i>
7.	154-156	Friday, 3/16/2018 5:53 PM CET	Form 20-F 2017	"We are exiting client relationships where we consider [...] risks to be too high while also strengthening our client on-boarding and know-your-client (KYC) procedures." <i>(Identical to #1)</i>
8.	157-158	Monday, 7/2/2018 and Sunday, 9/30/2018	Website as at 7/2/2018 and 9/30/2018	"Compliance: Conformity with the law and adherence to regulations and standards. How we assess and accept clients: We have developed effective procedures for assessing clients (Know Your Customer or KYC) and a process for accepting new clients in order to facilitate comprehensive compliance. Furthermore they help us to minimize risks relating to money laundering, financing of terrorism and other economic crime [...] Our procedures apply not only to individuals and corporations that are or may become our direct business partners, but also to people and entities that stand behind them or are indirectly linked to them." <i>(Identical to #3)</i>

9.	159-160	Tuesday, 7/10/2018 and Thursday, 9/27/2018	Website as at 7/10/2018 and 9/27/2018	“DB has developed and implemented a comprehensive set of measures to identify, manage and control its AML risk. These measures are: A robust and strict KYC program [...] to ensure all kinds of customers (natural or legal persons or legal structures, correspondent banks) are subject to adequate identification, risk rating and monitoring measures. [...] Special safeguards are implemented for business relationships with politically exposed persons (PEPs) and clients from countries or industries deemed high risk.” ( <i>Identical to #4</i> )
10.	161-162	Friday, 8/3/2018 10:15 AM CET	<i>Reuters News,</i> "EXCLUSIVE- Deutsche Bank reports show chinks in money laundering armour," August 3, 2018	“We are not struggling with procedures designed to help prevent criminals from money laundering and other criminal action. Our procedures to identify potential anti-money laundering and KYC risks are very effective.”
11.	163-166	Friday, 3/15/2019	Non-Financial Report 2018; Annual Financial Statements and Management Report 2018	“KYC is an ongoing process throughout the life cycle of a client relationship . . . As part of our regular client due diligence, we screen our relationships against internal and external criteria, e.g. relating to Politically Exposed Persons (PEPs), terrorism, or sanctions.”
12.	167-168	Thursday, 3/21/2019	Annual Report 2018	“We are exiting client relationships where we consider . . . risks to be too high while also strengthening our client on-boarding and know-your-client (KYC) procedures.” ( <i>Identical to #1</i> )
13.	169-171	Saturday, 3/23/2019 12:15 AM CET	Form 20-F 2018	“We are exiting client relationships where we consider [...] risks to be too high while also strengthening our client on-boarding and know-your-client (KYC) procedures.” ( <i>Identical to #1</i> )

14.	172-173	Tuesday, 7/2/2019 and Monday, 9/30/2019	Website as at 7/2/2019 and 9/30/2019	“Compliance: Conformity with the law and adherence to regulations and standards. How we assess and accept clients: We have developed effective procedures for assessing clients (Know Your Customer or KYC) and a process for accepting new clients in order to facilitate comprehensive compliance. Furthermore they help us to minimize risks relating to money laundering, financing of terrorism and other economic crime [...] Our procedures apply not only to individuals and corporations that are or may become our direct business partners, but also to people and entities that stand behind them or are indirectly linked to them.” ( <i>Identical to #3</i> )
15.	174-175	Wednesday, 7/10/2019 and Friday, 9/27/2019	Website as at 7/10/2019 and 9/27/2019	“DB has developed and implemented a comprehensive set of measures to identify, manage and control its AML risk. These measures are: A robust and strict KYC program [...] to ensure all kinds of customers (natural or legal persons or legal structures, correspondent banks) are subject to adequate identification, risk rating and monitoring measures. [...] Special safeguards are implemented for business relationships with politically exposed persons (PEPs) and clients from countries or industries deemed high risk.” ( <i>Identical to #4</i> )
16.	176-177	Friday, 3/13/2020	Non-Financial Report 2019	“Know Your Client (KYC) is an ongoing process throughout the life cycle of a client relationship . . . As part of its regular client due diligence, Deutsche Bank screens its client relationships against internal and external criteria, for instance relating to politically exposed persons, terrorism, or sanctions . . . payments are screened prior to being made.”

**Notes and Sources:** Alleged misrepresentations are taken from the Third Amended Complaint, ¶¶137-176.

<sup>1</sup> While the Complaint does not list the timestamps for alleged misrepresentations, I give them in CET where available and provide the day of the week.

## 2. Alleged Corrective Disclosures

19. There are 10 dates listed in the complaint alleging that the “Defendants’ prior misrepresentations and fraudulent conduct” became known to the market.<sup>16</sup> These

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<sup>16</sup> Third Amended Complaint, ¶178.

dates are commonly referred to as “corrective disclosures” in securities litigation<sup>17</sup> and I will refer to them as alleged corrective disclosures as well. The Complaint lists 11 alleged news disclosures for the 10 days.<sup>18</sup> I summarize the alleged disclosures below, providing the time of the alleged disclosure in Central European Time (CET)<sup>19</sup>:

- a. **German newspaper *Sueddeutsche Zeitung* reported on Wednesday, May 13, 2020, 6:00 PM CET:** According to the Plaintiffs, this article reported that a Federal Reserve audit report sent to Deutsche Bank executives in late March found that “Deutsche Bank had failed to address multiple concerns identified years earlier, including concerns related to the Bank’s AML and other control procedures.”<sup>20</sup>
- b. ***Financial Times* article “Wirecard Founder Braun Arrested on Suspicion of False Accounting” published on Wednesday, June 24, 2020:** According to the Plaintiffs, this article reported that an alleged Deutsche Bank client, Markus Braun, was “arrested on suspicion of false accounting and market manipulation” and that the Wirecard shares this alleged client allegedly pledged as collateral for a €150 million loan from Deutsche Bank had “fallen more than 80 percent” compared to the prior week.<sup>21</sup>

An article covering the arrest of the alleged Deutsche Bank client was published by the *Dow Jones Institutional News* on June 23, 2020 at 4:04

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<sup>17</sup> Nye Report, ¶69 and footnote 116.

<sup>18</sup> The Third Amended Complaint lists two news disclosures that it asserts are associated with the price change from Friday, July 10, 2013 to Monday, July 13, 2020. One of the two alleged corrective disclosures was released after the NYSE closed on July 13, 2020 and so could not be associated with that price drop.

<sup>19</sup> Trading hours on the Xetra exchange run from 9 AM to 5:30 PM CET (“Trading hours and trading calendar,” [https://www.boerse-frankfurt.de/en/know-how/trading-calendar], 2022). Trading hours on the NYSE run from 9:30 AM to 4 PM Eastern Time (“Holidays & Trading Hours,” [https://www.nyse.com/markets/hours-calendars], 2022); this is the same as 3:30 PM to 10 PM CET all year except between the second and last Sunday in March and between the last Sunday of October and the last Sunday in November, when NYSE trading hours are the same as 2:30 PM to 9 PM CET.

<sup>20</sup> Third Amended Complaint, ¶179.

<sup>21</sup> Third Amended Complaint, ¶181.



AM ET.<sup>22</sup> In my analysis below I use June 23, 2020 at 4:04 AM ET as the date and time of the alleged corrective disclosure. While the *Dow Jones Institutional News* article did not mention that Braun was a client of Deutsche Bank, this fact was known to the public well before the publication of the June 24 article cited by the Plaintiffs. In fact, the *Financial Times* had reported in an article published March 25, 2019 that Markus Braun had received a €150 million loan from Deutsche Bank.<sup>23</sup>

- c. ***Bloomberg Law* article “Deutsche Bank Accounting Head Is Aim of Wirecard Complaint” published on Friday, June 26, 2020, 4:10 PM CET:** According to the Plaintiffs, this article reported that a German retail investor association was targeting one former partner and two current partners of Ernst & Young in connection with the firm’s audit of Wirecard and that the former partner happened to be Deutsche Bank’s current chief accounting officer.<sup>24</sup>
  
- d. **Department of Financial Services fine on Tuesday, July 7, 2020, as reported in a *Law360* article “Deutsche Bank Fined \$150M For Epstein, Partner Bank Lapses” published on the same day, 5:07 PM CET:** According to the Plaintiffs, this article reported that the New York Department of Financial Services fined Deutsche Bank \$150 million for “neglecting to flag numerous questionable transactions from accounts associated with [Jeffrey] Epstein and two correspondent banks, Danske Estonia and FBME Bank, which were both the subject of prior scandals involving financial misconduct.”<sup>25</sup>
  
- e. ***Bloomberg Law* article “JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank” published on Thursday, July 9, 2020,**

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<sup>22</sup> “Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained,” *Dow Jones Institutional News*, June 23, 2020.

<sup>23</sup> “Deutsche Bank revealed as behind €150m loan to Wirecard founder,” *Financial Times*, March 25, 2019.

<sup>24</sup> Third Amended Complaint, ¶183.

<sup>25</sup> Third Amended Complaint, ¶¶185-188.

**10:00 AM CET:** According to the Plaintiffs, this article reported that JPMorgan had “stepped away from handling money for FBME in 2009” and that it distanced itself from Epstein and Danske Bank A/S “around 2013.”<sup>26</sup>

f. ***New York Times* article “These Are the Deutsche Bank Executives Responsible for Serving Jeffrey Epstein” published on Tuesday, July 14, 2020, 12:04 AM CET:** According to the Plaintiffs, this article identified “nearly every person anonymously described” in the New York State Department of Financial Services’ Consent Order “that omitted the executives’ and bankers’ names.”<sup>27</sup>

g. ***Bloomberg* report on Monday, July 13, 2020, 12:07 PM CET:** According to the Plaintiffs, Bloomberg “reported that Deutsche Bank’s legal risks in the U.S. include potential money-laundering breaches, with a Justice Department probe that may result in fines, despite penalties paid to other agencies over Russia mirror trades, Danske Bank and Jeffrey Epstein.”<sup>28</sup>

The Complaint references both items (f) and (g) as causes of the price decline observed between July 12 and July 13 on the NYSE. Item (f) was first published after the NYSE closed on July 13 and so could not have caused the price decline asserted by the Plaintiffs.

h. ***ABC News* report on Tuesday, July 28, 2020, 11:10 AM CET:** According to the Plaintiffs, this article reported that the U.S. Virgin Islands Attorney filed a “civil forfeiture lawsuit against Epstein’s estate in January 2020, which alleged that Jeffrey Epstein trafficked girls to the

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<sup>26</sup> Third Amended Complaint, ¶¶190-191.

<sup>27</sup> Third Amended Complaint, ¶193. It appears that the Plaintiffs consider this article to have been released on July 13 in time to influence the Deutsche Bank’s closing share price that day. However, the article came out after 4 PM ET, which is after the closing price on the NYSE is set.

<sup>28</sup> Third Amended Complaint, ¶194.

U.S. Virgin Islands, as recently as 2018” and “subpoenaed Deutsche Bank for account records, transaction details and communications concerning Epstein, his estate, and more than 30 corporations, trusts and nonprofit entities connected to him.”<sup>29</sup>

- i. ***Law360* article “Deutsche Bank to Pay \$583K to End Ukraine Sanctions Probe” published on Thursday, September 10, 2020, 1:55 AM CET:** According to the Plaintiffs, this article reported on an Enforcement Release from the U.S. Department of Treasury which disclosed that “Deutsche Bank Trust Company Americas violated Ukraine-related sanctions regulations when, without conducting appropriate due diligence, it processed a multi-million dollar transaction that involved IPP Oil Products (Cyprus) Ltd., an entity on the Office of Foreign Assets Control’s list of Specially Designated Nationals and Blocked Persons.”<sup>30</sup>
- j. ***BuzzFeed News* article “Deutsche Bank Execs Missed Money Laundering Red Flags” published on Sunday, September 20, 2020, 7:01 PM CET:** According to the Plaintiffs, the article reported that ““Deutsche managers, including top executives, had direct knowledge for years of serious failings that left the bank vulnerable to money launderers’ and characterized the Bank’s conduct as ‘let[ting] dirty clients run rampant.’”<sup>31</sup>
- k. ***Bloomberg Law* article “Singapore, Hong Kong Top Asia Destinations for Suspect Funds” published on Tuesday, September 22, 2020, 1:04 PM CET:** According to the Plaintiffs, the article reported that Deutsche Bank allegedly processed suspicious transactions in Hong Kong according

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<sup>29</sup> Third Amended Complaint, ¶196.

<sup>30</sup> Third Amended Complaint, ¶198.

<sup>31</sup> Third Amended Complaint, ¶200.

to an investigation by the International Consortium of Investigative Journalists.<sup>32</sup>

### **III. Summary of the Nye Report**

20. Dr. Nye analyzes whether the common stock of Deutsche Bank traded in an efficient market during the alleged Class Period and whether there is a common methodology that can be used to calculate damages for the proposed Class in a manner consistent with Plaintiffs' theory of liability.<sup>33</sup>

21. The following sections address each section of Dr. Nye's analysis.

#### **A. Analysis of Market Efficiency**

22. The Nye Report concludes that "the market for Deutsche Bank stock was efficient throughout the Class Period."<sup>34</sup>

23. As part of his analysis of market efficiency, Dr. Nye estimates a market model for the price of Deutsche Bank's shares on the Xetra and NYSE markets.<sup>35</sup> For purposes of this report, I will adopt his market models for the price of Deutsche Bank's shares on these two markets.

24. Dr. Nye uses these models to remove "contemporaneous market and industry effects" when assessing "whether new, material, Company-specific information promptly caused a measurable stock price reaction."<sup>36</sup>

#### **B. Correlation of U.S. and German Trading**

25. Dr. Nye includes an analysis of the correlation between prices for Deutsche Bank shares in the U.S. and German markets.

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<sup>32</sup> Third Amended Complaint, ¶202.

<sup>33</sup> Nye Report, ¶3.

<sup>34</sup> Nye Report, ¶6.

<sup>35</sup> Nye Report, Exhibit 11A and Exhibit 11D.

<sup>36</sup> Nye Report, ¶75.

26. The Nye Report concludes that “strong evidence of price parity implies that the various trading centers for Deutsche Bank stock in the U.S. and in Germany were equally efficient” during the alleged Class Period and that “a demonstration of informational efficiency for the U.S. market directly evidences the informational efficiency of the German market for Deutsche Bank stock, and vice versa.”<sup>37</sup>

27. Specifically, the Nye Report claims that the “contemporaneous daily stock returns of Deutsche Bank’s U.S.- and German-traded shares exhibited a 99.9% correlation with each other” and that “cross-market arbitrage was efficient enough to ensure price parity throughout each day, thereby implying that the markets for Deutsche Bank stock in the U.S. and in Germany were equally efficient” during the alleged Class Period.<sup>38</sup>

**C. The Nye Report States Damages Can Be Shown on a Class-Wide Basis Using the Alleged Corrective Disclosures**

28. Plaintiffs allege that the alleged misrepresentations inflated the prices of Deutsche Bank’s securities and that members of the Class suffered damages when the alleged misrepresentations “became known to the market.”<sup>39</sup>

29. This is consistent with the Nye Report. Dr. Nye asserts that class-wide damages can be measured by using an event study to isolate the impact of the alleged misstatements from other factors such as changes in market and industry conditions.<sup>40</sup> This use of an event study is a standard methodology and well accepted by courts in the United States.<sup>41</sup>

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<sup>37</sup> Nye Report, ¶57.

<sup>38</sup> Nye Report, ¶¶65-66.

<sup>39</sup> Third Amended Complaint, ¶178.

<sup>40</sup> Nye Report, ¶70.

<sup>41</sup> See, for example, *Erica P. John Fund, Inc. v. Halliburton Company*, No. 3: 02-CV-1152-M (N.D. Tex. July 25, 2015).

30. The methodology according to the Nye Report can be summarized as follows:

- a. “An investor incurs damages when a security is acquired at a price that is inflated as a result of false or misleading statements or omissions, provided that a later corrective disclosure and/or the materialization of a concealed risk causes the price of that security to decline.”<sup>42</sup>
- b. “Price inflation may be measured on a Class-wide basis by analyzing the change in a security’s price caused by a corrective disclosure and/or the materialization of a concealed risk” using an event study.<sup>43</sup>
- c. For each security acquired during the alleged Class Period, damages incurred are equal to:
  - i. the amount of inflation at purchase for a security retained through the end of the alleged Class Period; and
  - ii. the price inflation at purchase minus the price inflation at sale for a security sold later in the alleged Class Period.<sup>44</sup>

## **IV. Methodology Used to Establish Price Impact**

### **A. Observation of Price Impact for Misrepresentations and Corrective Disclosures**

31. An analysis of price impact examines whether the alleged misrepresentations affected the market price when they were made. In general, the price impact of an alleged misrepresentation can be observed in two ways, by observing a positive price change

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<sup>42</sup> Nye Report, ¶69. Dr. Nye refers to “corrective disclosures and/or the materialization of a concealed risk.” For ease, I refer to both terms as “corrective disclosures.”

<sup>43</sup> Nye Report, ¶70.

<sup>44</sup> Nye Report, ¶71. The Nye Report further states, “Given my understanding of the Supreme Court’s ruling in *Dura*, a security purchased during the Class Period and sold before the first corrective disclosure and/or the materialization of a concealed risk is ineligible for damages. Similarly, a security that is both purchased and sold between two consecutive disclosures of corrective information is ineligible for damages.” [citation omitted]

after an alleged misrepresentation or by observing a negative price change after an alleged corrective disclosure.<sup>45</sup>

32. The Plaintiffs assert that the alleged misrepresentations involve “the issuance of false and misleading statements and material omissions by the Defendants concerning Deutsche Bank’s Know Your Customer (‘KYC’) procedures and processes.”<sup>46</sup> It is my understanding that a statistically significant price increase would *not* be expected at the time any alleged misrepresentations were simply repeated. Dr. Nye’s methodology is consistent with this conclusion as he states that price inflation “may be measured on a Class-wide basis by analyzing the change in a security’s price caused by a corrective disclosure and/or the materialization of a concealed risk.”<sup>47</sup> Given this, in my event studies below I focus on the alleged corrective disclosures, although I also examine the market reactions to each of the alleged misrepresentations.

33. For my event studies of the impact of the alleged misrepresentations, I examined the alleged misrepresentations themselves, when and how the alleged misrepresentations were allegedly revealed to the market (i.e., the alleged corrective disclosures), and other contemporaneous publicly available information regarding Deutsche Bank, including equity analyst reports, SEC filings, conference call transcripts, ratings agency reports, and both English- and German-language news stories from Bloomberg and Factiva.<sup>48</sup>

## **B. The Use of Event Studies to Show Price Impact**

34. Event studies are commonly used to quantify the magnitude of a change in the price of a security following the disclosure of information, relative to changes in the market

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<sup>45</sup> *Halliburton I*, 131 S. Ct. 2179, 2186 (2011), (“‘[P]rice impact’ – that is, whether the alleged misrepresentations affected the market price in the first place.”). *Halliburton II*, 134 S. Ct. 2398 (2014).

<sup>46</sup> Plaintiffs’ Memorandum of Law in Support of Plaintiffs’ Motion for Class Certification, *Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.*, Southern District of New York District Court, Case No. 22-cv-2854 (JSR), July 18, 2022, p. 1.

<sup>47</sup> Nye Report, ¶70.

<sup>48</sup> Bloomberg is a commonly used provider of financial data and news, and Factiva is an online news reporting service and archive owned by Dow Jones & Company, Inc. that aggregates news content from nearly 33,000 sources from around the world.

and industry more generally, which occur at the same time.<sup>49</sup> The intention is to isolate the impact of the news that is company specific and related to the news in question. By using a market model, an event study can also examine the statistical significance of the impact. The threshold academic standard for statistical significance examines whether a movement is larger than what one would expect to occur up to 5% of the time owing to chance.<sup>50</sup> If the price movement is not statistically significant then one cannot rule out that the price change was due to chance. This standard has been accepted and used by the courts in securities litigation including when evaluating price impact.<sup>51</sup>

35. I tested Deutsche Bank's stock price reactions with event studies that used the market models put forward in the Nye Report. The market models in the Nye Report use the MSCI World Index, "a broad global equity index that represents large and mid-cap equity performance across . . . 23 developed markets countries" to control for market movements and a custom peer group index to control for industry movements.<sup>52</sup> The Nye Report uses a rolling control period of one calendar year prior to each event.

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<sup>49</sup> For a discussion of the uses of event studies within the litigation context, see David I. Tabak and Frederick C. Dunbar, "Materiality and Magnitude: Event Studies in the Courtroom," *Litigation Services Handbook: The Role of the Financial Expert*, 3rd ed., Weil, Roman L. et al. eds., John Wiley & Sons, Inc. (New York), 2001, Chapter 19.

<sup>50</sup> Evaluating statistical calculations at the 95<sup>th</sup> percent confidence interval is standard in economics. "The 5% level is the most common in social science," "Reference Guide on Statistics" in *Reference Manual on Scientific Evidence*, Third Edition (2011), p. 251.

<sup>51</sup> See for example, *Erica P. John Fund, Inc. v. Halliburton Company*, No. 3: 02-CV-1152-M (N.D. Tex. July 25, 2015) ("[T]o show that a corrective disclosure had a negative impact on a company's share price, courts generally require a party's expert to testify based on an event study that meets the 95% confidence standard."); *In re Intuitive Surgical Securities Litigation*, No. 5: 13-cv-01920-EJD (N.D. Cal. Dec. 22, 2016) ("[T]he court finds a lack of price impact in connection with the release of Intuitive's financial results between April 18th and April 19th 2013. First, neither Lehn nor Coffman found a statistically significant price impact at the 95% confidence level for this date. [...] Although Plaintiffs argue that price impact at a 90% confidence level is a statistically significant, the district court in Halliburton Tex adopted 95% confidence level as the threshold requirement and this court finds no reason to deviate here."); *In re Moody's Corporation Securities Litigation*, 274 F.R.D. 480 (S.D.N.Y. Mar. 31, 2011) ("[A] significant negative return[...]below the conventional statistical measure of a 95% confidence level[...]is not sufficient evidence of a link between the corrective disclosure and the price.").

<sup>52</sup> Nye Report, ¶¶77-78.



## V. The Alleged Misrepresentations Do Not Have Any Price Impact

### A. Each Corrective Disclosure Is Statistically Insignificant

36. Using the Nye Report's market models for the NYSE and the Xetra markets and his own calculations of the daily return to Deutsche Bank's shares after removing market and industry impacts, I examined whether the alleged corrective disclosures have statistically significant price changes associated with them.<sup>53</sup> There are no statistically significant price declines at the 5% level following any of the alleged corrective disclosures, as summarized in Exhibit 3 below. Detailed results are shown in Appendices IV and V.

Exhibit 3. *Deutsche Bank Stock Price Reactions Following the Alleged Corrective Disclosure*

German Market			US Market		
Pre-Reaction and Reaction Date	t-stat Company- Specific Return <sup>1</sup>	Significant at 5% Level? <sup>2</sup>	Pre-Reaction and Reaction Date	t-stat Company- Specific Return <sup>1</sup>	Significant at 5% Level? <sup>2</sup>
(1)	(2)	(3)	(4)	(5)	(6)
1. "Slap in the face from America" (Sueddeutsche Zeitung). Published Wednesday, May 13, 2020, 6:00 PM CET (12:00 PM ET).					
5/13/2020			5/12/2020		
5/14/2020	(0.174)	No	5/13/2020	(0.698)	No
2. "Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained" (Dow Jones Institutional News). Published Tuesday, June 23, 2020, 10:04 AM CET (4:04 AM ET). <sup>3</sup>					
6/22/2020			6/22/2020		
6/23/2020	0.408	No	6/23/2020	0.311	No

<sup>53</sup> I use Dr. Nye's company-specific return from the closing price immediately prior to the news release to the closing price after the news release.

3. *"Deutsche Bank Accounting Head Is Aim of Wirecard Complaint" (Bloomberg Law). Published Friday, June 26, 2020, 4:10 PM CET (10:10 AM ET).*

6/25/2020			6/25/2020		
6/26/2020	(0.408)	No	6/26/2020	(0.786)	No

4. *"Deutsche Bank Fined \$150M For Epstein, Partner Bank Lapses" (Law360). Published Tuesday, July 7, 2020, 5:07 PM CET (11:07 AM ET).*

7/6/2020			7/6/2020		
7/7/2020	0.552	No	7/7/2020	0.488	No

5. *"JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank" (Bloomberg Law). Published Thursday, July 9, 2020, 10:00 AM CET (4:00 AM ET).*

7/8/2020			7/8/2020		
7/9/2020	0.086	No	7/9/2020	(0.489)	No

6. *"Deutsche Bank Litigation Research" (Bloomberg Intelligence), published Monday, July 13, 2020, 12:07 PM CET (6:07 AM ET).*

7/10/2020			7/10/2020		
7/13/2020	(1.743)	No	7/13/2020	(1.917)	No

7. *"Virgin Islands government subpoenas multiple banks for Jeffrey Epstein's financial records" (ABC News). Published Tuesday, July 28, 2020, 11:10 AM CET (5:10 AM ET).*

7/27/2020			7/27/2020		
7/28/2020	(0.710)	No	7/28/2020	(0.586)	No

8. *"Deutsche Bank To Pay \$583K To End Ukraine Sanctions Probe" (Law360). Published Thursday, September 10, 2020, 1:55 AM CET (Wed., September 9, 7:55 PM ET).*

9/9/2020			9/9/2020		
9/10/2020	(0.113)	No	9/10/2020	0.148	No

9. *"Deutsche Bank Execs Missed Money Laundering Red Flags" (BuzzFeed News). Published Sunday, September 20, 2020, 7:01 PM CET (1:01 PM ET).*

9/18/2020			9/18/2020		
9/21/2020	(1.520)	No	9/21/2020	(2.440)	No

10. *"Singapore, Hong Kong Top Asia Destinations for Suspect Funds" (Bloomberg Law), published Tuesday, September 22, 2020, 1:04 PM CET (7:04 AM ET).*

9/21/2020			9/21/2020		
9/22/2020	(0.461)	No	9/22/2020	(0.759)	No

**Notes and Sources:** Alleged disclosures are taken from the Third Amended Complaint, ¶¶178-203. T-statistics are taken from the Nye Report, Exhibits 11B, 11E.

<sup>1</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>2</sup> Significance is based on the company-specific return's t-statistic. Significance levels shown in the table have been adjusted to correct for multiple comparisons using the Holm-Bonferroni method. See, "Reference Guide on Statistics," *Reference Manual on Scientific Evidence*, (Federal Judicial Center, 3rd ed., 2011), 290 and Aickin, Mike and Helen Gensler, "Adjusting for Multiple Testing when Reporting Research Results: The Bonferroni vs Holm Methods," *American Journal of Public Health*, 86(5): 1996.

If an adjustment for multiple comparisons were not necessary, the absolute value of the t-statistic required for significance at the 5% level would be approximately 1.97 for each t-statistic shown above. After adjusting significance levels for multiple comparisons using the Holm-Bonferroni method, the critical level required for significance at the 5% level varies for each t-statistic. The critical levels vary from approximately 1.97 to 2.83 for both markets (see Appendices IV and V).

<sup>3</sup> Plaintiffs claim that the contents of this article were released on June 24, 2020 in "Wirecard Founder Braun Arrested on Suspicion of False Accounting," *Financial Times* (Third Amended Complaint, ¶181). Even if one assumes that the arrest of Braun was not known until June 24, 2020, the t-statistic for the company-specific return on June 24, 2020 was (0.33) for the German market and (0.55) for the U.S. Market, indicating that there were no statistically significant price declines on this date either (Nye Report, Exhibits 11B and 11E).

37. Based on the market models and company-specific returns calculated and put forth in the Nye Report, there is no evidence of price impact in Deutsche Bank's share price following each of the alleged corrective disclosures.

38. In the analysis above, I performed the statistical tests using an adjustment for multiple comparisons, the Holm-Bonferroni method.<sup>54</sup> This adjustment is appropriate as the Plaintiffs have alleged more than one corrective disclosure date and any one of the alleged corrective disclosures, if found to be statistically significant, may be considered to be evidence of price impact of all of the alleged misrepresentations.

39. In Exhibit 3 above there are twenty possible statistical tests. If one uses a 5% significance level and does not correct for multiple comparisons, then we would expect one of these days to have a statistically significant company-specific return even there were an absence of any material information (i.e. 20 times 0.05 equals 1). In fact, the *Reference Manual on Scientific Evidence* published by the Federal Judicial Center uses such an example in its definition of multiple comparison:

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<sup>54</sup> See "Update on Economic Analysis of Price Impact in Securities Class Actions Post-*Halliburton II*," by Jorge Baez and Dr. Renzo Comolli, August 11, 2015, p. 2 ("An issue arises when multiple price reactions are tested for statistical significance: the more price reactions that are tested, the greater the probability of finding statistical significance simply due to chance (i.e., when there is no company-specific news of importance to the market). This issue is known in statistics as 'multiple comparisons.'"). For a discussion of the statistical properties of the Holm-Bonferroni adjustment, see the sources cited in footnote 2 to Exhibit 3 above.

Multiple comparisons complicate the interpretation of a p-value. For example, if 20 divisions of a company are examined, and one division is found to have a disparity “significant” at the 0.05 level, the result is not surprising; indeed, it should be expected under the null hypothesis.<sup>55</sup>

40. If one were to not make a multiple-comparison adjustment, then the only significant date of the 10 alleged disclosure dates is September 20, 2020 which would be statistically significant at the 5% significance level. However, this is the case only if one examines the close-to-close return on the NYSE, not the Xetra market. The alleged corrective disclosure in this case occurred on a Sunday. The proper market to use to examine price impact of this news is the Xetra market, as 75% of the trading volume in Deutsche Bank’s shares occur on the Xetra market and using only the NYSE close-to-close returns would ignore the information and results provided by examining the Xetra market.

## **B. Analyst Commentary of and other Market Response to the Alleged Corrective Disclosures**

41. For each alleged corrective disclosure, I reviewed contemporaneous and subsequent news stories, any contemporaneous company conference calls with analysts, ratings agency reports and equity analyst commentary as a further check on whether market participants and analysts felt the alleged corrective disclosure had an impact on the price of Deutsche Bank’s shares and also to determine if there was possibly any contemporaneous confounding company-specific news that was somehow preventing a price impact that would be visible in the absence of that news. For all such dates, I did not find any contemporaneous positive confounding news or the potentially confounding positive news was not important enough to be mentioned by any equity analysts. In addition, as discussed below, none of the alleged corrective disclosures were even mentioned by the analysts.
42. Market discussion and commentary regarding each alleged corrective disclosure is described and discussed below.

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<sup>55</sup> Kaye, David H. and David A. Freedman, “Reference Guide on Statistics,” *Reference Manual on Scientific Evidence*, Third Edition, Federal Judicial Center, 2011, p. 290.

43. The Plaintiffs do not always indicate the earliest publication of the news that they point to as being a potential misrepresentation or corrective disclosure. While I have sought out the earliest publication of the source for each alleged disclosure as delineated in the complaint, I have not verified when the information included in that source was first revealed to the market, except for the July 13 alleged corrective disclosure and the September 20 alleged disclosure because they are the two dates that even begin to approach statistical significance (even though they do not meet that standard).

**1. Analyst commentary following the alleged corrective disclosure on Wednesday, May 13, 2020**

44. Plaintiffs claim that, in response to the German newspaper *Sueddeutsche Zeitung* report regarding criticism by the Federal Reserve of Deutsche Bank's U.S. operations published on May 13, 2020, "the value of Deutsche Bank's ordinary shares fell \$0.31 per share, or 4.49%, to close at \$6.60 per share on May 13, 2020."<sup>56</sup>

45. I identified two analyst reports published on the day of disclosure and in the week after. Neither of these analyst reports mentioned the Federal Reserve internal audit criticizing Deutsche Bank or any other alleged failure by Deutsche Bank to follow AML or other control procedures.

**2. Analyst commentary following the alleged corrective disclosure on Wednesday, June 24, 2020**

46. Plaintiffs claim that, in response to a *Financial Times* article regarding the arrest of Deutsche Bank client Markus Braun published on June 24, 2020, "the value of Deutsche Bank's securities fell \$0.43 per share, or 4.50%, to close at \$9.12 per share on June 24, 2020."<sup>57</sup>

47. In fact, the arrest of Markus Braun was first reported in a June 23 article by *Dow Jones Institutional News* titled "Munich Prosecutor Officer: Ex-Wirecard CEO Braun

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<sup>56</sup> Third Amended Complaint, ¶¶179-180.

<sup>57</sup> Third Amended Complaint, ¶¶181-182.

Detained.” The article states that “Markus Braun was arrested [...] on suspicion of presenting false information.”<sup>58</sup>

48. I identified eight analyst reports published on June 23 and in the week after. None of these reports mentioned Markus Braun’s arrest.

### **3. Analyst commentary following the alleged corrective disclosure on Friday, June 26, 2020**

49. Plaintiffs claim that, in response to the *Bloomberg Law* article regarding a Deutsche Bank accounting executive’s involvement with Wirecard published on June 26, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.57 per share, or 5.96%, to close at \$9.00 per share on June 26, 2020.”<sup>59</sup>

50. I identified nine analyst reports published on the day of the alleged disclosure and in the week after. None of these analyst reports mentioned the contents of the June 26 *Bloomberg Law* article. Three of the reports mentioned Deutsche Bank’s involvement in legal proceedings or alleged high-risk clients of Deutsche Bank. One of these reports, published by Bank of America on June 30, stated that “hedging against corporate exposures... is expected to limit Wirecard-related losses” and that one downside risk to Deutsche Bank’s valuation was posed by “litigation charges over and above what we have allowed for in our estimates.”<sup>60</sup> Another report published the same day by Kepler Cheuvreux mentioned “legal and compliance risks” to Deutsche Bank’s value, stating, “DBK is currently involved in several legal [sic] (Danske AML case, Cum-ex case etc), that might significantly affect the bank’s financial [sic].” The report also stated that governance issues were an influence on Deutsche Bank’s valuation and commented that Deutsche Bank reiterated its risk guidance for 2020 “even post-Wirecard,” though this was not included in the report’s “Risks to our rating” section.<sup>61</sup> The legal risks mentioned in this report are repeated from earlier

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<sup>58</sup> “Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained,” *Dow Jones Institutional News*, June 23, 2020.

<sup>59</sup> Third Amended Complaint, ¶¶183-184.

<sup>60</sup> Bank of America, “IB moderating 2Q20 losses,” June 30, 2020.

<sup>61</sup> Kepler Cheuvreux, “Pre-close sell-side briefing feedback,” June 30, 2020.

Kepler Cheuvreux coverage of Deutsche Bank; a report published by Kepler Cheuvreux in 2019 commented on “high risks related to DBK’s [...] AML controls” and “a potential fine in the Danske AML case.”<sup>62</sup> The third report, published by Societe Generale on July 1, mentioned Deutsche Bank’s “litigation issues”, “high-profile investigations” involving Deutsche Bank, and possible AML fines as reasons for downgrading Deutsche Bank from Hold to Sell.<sup>63</sup> These concerns were not raised in response to recent news; the July 1 Societe Generale report does not mention Wirecard, and Societe Generale had already mentioned “future litigation (mainly FX trading, Russian money laundering)” as an influence on its valuation in a 2019 report.<sup>64</sup>

#### **4. Analyst commentary following the alleged corrective disclosure on Tuesday, July 7, 2020**

51. Plaintiffs claim that, in response to the \$150 million fine imposed on Deutsche Bank by the New York Department of Financial Services on July 7, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.13 per share, or 1.31%, to close at \$9.82 per share on July 7, 2020.”<sup>65</sup>

52. I identified eight analyst reports published on the day of the disclosure and in the week after. None of these analyst reports mentioned the fine imposed by the New York Department of Financial Services. Three of the reports mentioned Deutsche Bank’s involvement in litigation proceedings or general concerns about governance. The first report, published by RBC on July 7, 2020, wrote about Deutsche Bank: “Litigation could lead to higher expenses than included in our forecasts [...] DBK could be found to be involved in anti-money laundering investigations.”<sup>66</sup> The second report, published by Morgan Stanley on July 7, 2020, noted “litigation

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<sup>62</sup> Kepler Cheuvreux, “Play it like a Swiss, Christian!” June 28, 2019.

<sup>63</sup> Societe Generale, “Road to ESG integration: SG walks the talk, embedding ESG into target prices,” July 1, 2020.

<sup>64</sup> Societe Generale, “Deutsche Bank AG: We strongly reiterate our stance – Credit positive, Equity (very) negative,” October 31, 2019.

<sup>65</sup> Third Amended Complaint, ¶¶185-189.

<sup>66</sup> RBC Capital Markets, “Global Investment Banks: Capital Markets Scorecard – Q2 strong across most products,” July 7, 2020.

settlements/provisions” as an “investment driver” for Deutsche Bank.<sup>67</sup> The third report, published by Societe Generale on July 8, 2020, wrote: “Our main worry is still governance. Governance has been stripped away from banks.”<sup>68</sup>

## **5. Analyst commentary following the alleged corrective disclosure on Thursday, July 9, 2020**

53. Plaintiffs claim that, in response to the *Bloomberg Law* article regarding alleged high-risk clients of Deutsche Bank who were previously clients of JPMorgan published on July 9, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.28 per share, or 2.80%, to close at \$9.72 per share on July 9, 2020.”<sup>69</sup>

54. I found ten analyst reports published on the day of disclosure and in the week after. None of these reports mentioned the contents of the July 9 disclosure. One analyst report mentioned Wirecard. This report, published by KBW on July 10, 2020, wrote about Deutsche Bank: “Wirecard exposure small and already made provision guidance post Wirecard news.”<sup>70</sup>

## **6. Analyst commentary following the alleged corrective disclosure on Monday, July 13, 2020**

55. Plaintiffs claim that, in response to the July 13 *Bloomberg Intelligence* article regarding an ongoing Justice Department probe of Deutsche Bank and the July 13 *New York Times* article giving the names of Deutsche Bank executives who allegedly served Jeffrey Epstein, “the value of Deutsche Bank’s ordinary shares fell \$0.37 per share, or 3.66%, to close at \$9.73 per share on July 13, 2020.”<sup>71</sup>

56. I found ten analyst reports published on the day of disclosure and in the week after. None of these reports mentioned potential money-laundering breaches or involvement

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<sup>67</sup> Morgan Stanley, “EUR IBs: trading up, 2020 estimates up. Overweight BNP and Credit Suisse,” July 8, 2020. The report is timestamped at “July 8, 2020 03:00 AM GMT,” which is the same as July 7, 2020 11:00 PM ET.

<sup>68</sup> Societe Generale, “European Banks: More positive into clearer 2Q outlook,” July 8, 2020.

<sup>69</sup> Third Amended Complaint, ¶¶190-192.

<sup>70</sup> Keefe, Bruyette & Woods, “European Investment Banks: 2Q20 Preview: When the sky falls, we shall all catch larks,” July 10, 2020.

<sup>71</sup> Third Amended Complaint, ¶¶193-195.



in a Justice Department probe by Deutsche Bank, nor do they mention fines previously paid by Deutsche Bank over its involvement with high-risk clients, including Jeffrey Epstein.

**a) The Alleged Corrective Disclosures on July 13, 2020  
Could Not Be Evidence of Price Impact**

57. The Plaintiffs allege that the *Bloomberg Intelligence* article contributed to the price drop on July 13 by revealing that “Deutsche Bank’s legal risks in the U.S. include potential money-laundering breaches, with a Justice Department probe that may result in fines, despite penalties paid to other agencies over Russia mirror trades, Danske Bank and Jeffrey Epstein.”<sup>72</sup> Every one of these topics were already publicly known and many of them were discussed in the *Bloomberg Law* article that constitutes the Plaintiff’s July 9 alleged corrective disclosure.<sup>73</sup>

58. Plaintiffs also claim that the July 13 *New York Times* article contributed to the price drop that day by revealing the names of Deutsche Bank executives who served Jeffrey Epstein. This article was in fact published no earlier than 6:04 pm ET on July 13, after the close of NYSE trading on that day.<sup>74</sup> Therefore, it could not have been related to the price drop in either the German market or the US market on that day.

**7. Analyst commentary following the alleged corrective  
disclosure on Tuesday, July 28, 2020**

59. Plaintiffs claim that, in response to the *ABC News* article published on July 28, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.1 per share, or 1.05%, to close at \$9.45 per share on July 28, 2020.”<sup>75</sup>

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<sup>72</sup> Third Amended Complaint, ¶194.

<sup>73</sup> “JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank,” *Bloomberg Law*, July 9, 2020. While Deutsche Bank’s involvement in Russian mirror trading was not mentioned in the July 9 *Bloomberg Law* article, it was mentioned in news coverage as early as 2017 (e.g. *Reuters News*, “The ‘mirror’ trades that caught Deutsche in Russian web,” January 31, 2017).

<sup>74</sup> “These Are the Deutsche Bank Executives Responsible for Serving Jeffrey Epstein,” *The New York Times*, July 13, 2020.

<sup>75</sup> Third Amended Complaint, ¶¶196-197.

60. I found forty analyst reports published on the day of the alleged disclosure and in the week after. Three of these mentioned Deutsche Bank's involvement in litigation relating to AML matters as a potential influence on Deutsche Bank's valuation. The first of these, published by Kepler Cheuvreux on July 29, mentions "legal and compliance risks" to Deutsche Bank's value, stating, "DBK is currently involved in several legal [sic] (Danske AML case, Cum-ex case etc), that might significantly affect the bank's financial [sic]."<sup>76</sup> The second, published by Societe Generale on July 30, simply restates that "rising litigation concerns" and "an increasing likelihood of... greater scrutiny of DBK's AML deficiencies" were causes for downgrading Deutsche Bank from Hold to Sell in its July 1 report.<sup>77</sup> The third, published by Kepler Cheuvreux on August 3, also mentions legal and compliance risks as well as "DBK's flawed governance" as influences on Deutsche Bank's valuation, and reiterates that "DBK is currently involved in several legal (Danske AML case, Cum-ex case etc), that might significantly affect the bank's financial."<sup>78</sup>

61. None of the abovementioned analyst commentary contains any reference to the contents of the *ABC News* article published on July. Moreover, mentions of AML concerns were repeated from earlier commentary and are not responses to new information about Deutsche Bank's AML procedures or alleged violations thereof. Kepler Cheuvreux's comments on AML-related legal proceedings against Deutsche Bank were also made in a report published on June 30.<sup>79</sup> Societe Generale also mentions concerns about "future litigation (mainly FX trading, Russian money laundering)" as an influence on its valuation in a 2019 report.<sup>80</sup>

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<sup>76</sup> Kepler Cheuvreux, "High but low quality beat," July 29, 2020. This is a repeat of a statement in an earlier Kepler Cheuvreux report (Kepler Cheuvreux, "Pre-close sell-side briefing feedback," June 30, 2020).

<sup>77</sup> Societe Generale, "Deutsche Bank AG: Nothing has really changed – Negative on equity, positive on credit," July 30, 2020.

<sup>78</sup> Kepler Cheuvreux, "The almighty IB?" August 3, 2020.

<sup>79</sup> Kepler Cheuvreux, "Pre-close sell-side briefing feedback," June 30, 2020.

<sup>80</sup> Societe Generale, "Deutsche Bank AG: We strongly reiterate our stance – Credit positive, Equity (very) negative," October 31, 2019.

## 8. Analyst commentary following the alleged corrective disclosure on Wednesday, September 9, 2020

62. Plaintiffs claim that, in response to the Law360 article published on September 9, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.07 per share, or 0.74%, to close at \$9.35 per share on September 10, 2020.”<sup>81</sup> I found six analyst reports published on the day of the disclosure and in the week after. One of these, a report published by Kepler Cheuvreux on the day of the disclosure, mentions “legal and compliance risks” and “very poor governance” as influences on Deutsche Bank’s value, stating, “DBK is currently involved in several legal [sic] (Danske AML case, Cum-ex case etc), that might significantly affect the bank’s financial [sic].”<sup>82</sup> The article makes no mention of the contents of the September 9 Law360 article. Moreover, the statements about AML concerns and Deutsche Bank’s legal risks are largely repeated from earlier commentary by Kepler Cheuvreux.<sup>83</sup> The other article, published by JPMorgan on September 14, merely states that “Legal risk [...] could be worse than our estimates” and does not comment on the contents of the September 9 Law360 article, nor does it comment on AML concerns or Deutsche Bank’s legal risks more generally.<sup>84</sup>

## 9. Analyst commentary following the alleged corrective disclosure on Sunday, September 20, 2020

63. Plaintiffs claim that, in response to the *BuzzFeed News* article published on September 20, 2020, “the value of Deutsche Bank’s ordinary shares fell \$0.75 per share, or 8.25%, to close at \$8.34 per share on September 21, 2020.”<sup>85</sup>

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<sup>81</sup> Third Amended Complaint, ¶¶198-199.

<sup>82</sup> Kepler Cheuvreux, “The Italian option with Banco BPM?” September 9, 2020.

<sup>83</sup> Kepler Cheuvreux, “High but low quality beat,” July 29, 2020.

<sup>84</sup> JPMorgan Cazenove, “Global Investment Bank Tracker: 3Q to be above consensus, up YoY driven by Equities: ongoing preference for MtM gearing UBS, GS,” September 14, 2020.

<sup>85</sup> Third Amended Complaint, ¶¶200-201.

64. I found five analyst reports published on the day of the disclosure or in the week after. None of these reports mention the contents of the September 20 *BuzzFeed News* article.

**a) The Alleged Corrective Disclosure on September 20, 2020 Could Not Be Evidence of Price Impact**

65. Plaintiffs imply that the contents of the *BuzzFeed News* article - which reported that “‘Deutsche managers, including top executives, had direct knowledge for years of serious failings that left the bank vulnerable to money launderers’ and characterized the Bank’s conduct as ‘let[ting] dirty clients run rampant’” – were new at the time of publication. In fact, the contents of this article were already known; Germany’s finance ministry even issued a statement on September 21 specifically addressing that the *BuzzFeed* article and related articles did not contain new revelations, and that “‘the cases with a German connection [had] been dealt with.’”<sup>86</sup>

**10. Analyst commentary following the alleged corrective disclosure on Tuesday, September 22, 2020**

66. Plaintiffs claim that, in response to the *Bloomberg Law* article published on September 22, 2020 regarding Deutsche Bank’s alleged processing of suspicious transactions in Hong Kong, “the value of Deutsche Bank’s ordinary shares fell \$0.2 per share, or 2.4%, to close at \$8.14 per share on September 22, 2020.”<sup>87</sup>

67. I found five analyst reports published on the disclosure date and in the week after. None mention the contents of the September 22 *Bloomberg Law* article.

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<sup>86</sup> “Germany says FinCEN money laundering revelations are not new,” *Reuters News*, September 21, 2020.

<sup>87</sup> Third Amended Complaint, ¶¶202-203.

### C. Analysis of Market Reaction at the Time of the Alleged Misrepresentations Offers No Evidence that They Had Price Impact

68. I analyzed the price reactions following the alleged misrepresentations given that that Plaintiffs have also alleged material misrepresentation.<sup>88</sup> These are shown in Appendix VI and VII. There was no statistically significant price increase on any of the trading days following the alleged misrepresentations, as shown in Exhibit 4 below.<sup>89</sup>

Exhibit 4. *Deutsche Bank Stock Price Reactions Following the Alleged Misrepresentations*

German Market			US Market		
Pre-Reaction and Reaction Date	t-stat Company- Specific Return <sup>1</sup>	Significant at 5% Level? <sup>2</sup>	Pre-Reaction and Reaction Date	t-stat Company- Specific Return <sup>1</sup>	Significant at 5% Level? <sup>2</sup>
(1)	(2)	(3)	(4)	(5)	(6)
1. <i>Annual Report 2016. Published Tuesday, March 14, 2017.</i>					
3/13/2017			3/13/2017		
3/14/2017	0.046	No	3/14/2017	(0.506)	No
2. <i>2016 20-F. Published Monday, March 20, 2017, 2:27 PM CET (9:27 AM ET).</i>					
3/17/2017			3/17/2017		
3/20/2017	(1.382)	No	3/20/2017	(0.716)	No
3. <i>Website post on Sunday, July 2, 2017.</i>					
6/30/2017			6/30/2017		
7/3/2017	0.109	No	7/3/2017	(0.492)	No
4. <i>Website post on Monday, July 10, 2017.</i>					
7/7/2017			7/7/2017		
7/10/2017	(0.323)	No	7/10/2017	(0.146)	No
5. <i>Non-Financial Report 2017. Published Monday, March 12, 2018.</i>					
3/9/2018			3/9/2018		
3/12/2018	0.044	No	3/12/2018	(0.040)	No

<sup>88</sup> Third Amended Complaint, ¶178.

<sup>89</sup> There would be no statistically significant price increases even if one were not to adjust for multiple comparisons.

6. *Website post on Thursday, March 15, 2018.*

3/14/2018			3/14/2018		
3/15/2018	0.267	No	3/15/2018	(0.146)	No

7. *2017 20-F. Published Friday, March 16, 2018, 5:53 PM CET (12:53 PM ET).*

3/16/2018			3/15/2018		
3/19/2018	(0.530)	No	3/16/2018	0.293	No

8. *Website post on Monday, July 2, 2018.*

6/29/2018			6/29/2018		
7/2/2018	1.136	No	7/2/2018	0.198	No

9. *Website post on Tuesday, July 10, 2018.*

7/9/2018			7/9/2018		
7/10/2018	(0.240)	No	7/10/2018	(0.025)	No

10. *Public statement on Friday, August 3, 2018 (Reuters News, "EXCLUSIVE-Deutsche Bank reports show chinks in money laundering armour," August 3, 2018 10:15 AM CET (4:15 AM ET)).*

8/2/2018			8/2/2018		
8/3/2018	(0.271)	No	8/3/2018	(0.765)	No

11. *Website post on Thursday, September 27, 2018.*

9/26/2018			9/26/2018		
9/27/2018	0.543	No	9/27/2018	(0.168)	No

12. *Website post on Sunday, September 30, 2018.*

9/28/2018			9/28/2018		
10/1/2018	(0.528)	No	10/1/2018	(0.812)	No

13. *Non-Financial Report 2018. Published Friday, March 15, 2019.*

3/14/2019			3/14/2019		
3/15/2019	(0.797)	No	3/15/2019	(0.669)	No

14. *Annual Report 2018. Published Thursday, March 21, 2019.*

3/20/2019			3/20/2019		
3/21/2019	(0.220)	No	3/21/2019	(1.327)	No

15. *2018 20-F. Published Sunday, March 23, 2019 12:15 AM CET (Sat. 3/22 7:15 PM ET).*

3/22/2019			3/22/2019		
3/25/2019	(0.081)	No	3/25/2019	0.253	No

16. *Website post on Tuesday, July 2, 2019.*

7/1/2019			7/1/2019		
7/2/2019	0.408	No	7/2/2019	(0.139)	No

17. *Website post on Wednesday, July 10, 2019.*

7/9/2019			7/9/2019		
7/10/2019	0.594	No	7/10/2019	1.411	No

18. *Website post on Friday, September 27, 2019.*

9/26/2019			9/26/2019		
9/27/2019	0.889	No	9/27/2019	0.723	No

19. *Website post on Monday, September 30, 2019.*

9/27/2019			9/27/2019		
9/30/2019	(0.512)	No	9/30/2019	(0.300)	No

20. *Non-Financial Report 2019. Published Friday, March 13, 2020.*

3/12/2020			3/12/2020		
3/13/2020	(1.692)	No	3/13/2020	(4.867)	Yes

**Notes and Sources:** Alleged misrepresentations are taken from the Third Amended Complaint, ¶¶137-176. T-statistics taken from the Nye Report, Exhibits 11B and 11E. Timestamps for alleged misrepresentations are given in CET where available.

<sup>1</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>2</sup> Significance is based on the company-specific return's t-statistic. Significance levels shown in the table have been adjusted to correct for multiple comparisons. Adjustment is made using the Holm-Bonferroni method. See, "Reference Guide on Statistics," *Reference Manual on Scientific Evidence*, (Federal Judicial Center, 3rd ed., 2011), 290 and Aickin, Mike and Helen Gensler, "Adjusting for Multiple Testing when Reporting Research Results: The Bonferroni vs Holm Methods," *American Journal of Public Health*, 86(5): 1996.

69. My analysis of the market reaction at the time of the alleged misrepresentations shows no evidence of price impact.

## VI. The Lack of Price Impact Means that the Class Is Not Damaged

70. Based upon the analyses above, I find that there are no damages to the Class from the alleged misrepresentations.

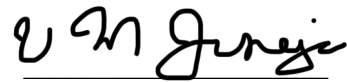
71. The Nye Report claims that price inflation "may be measured on a Class-wide basis by analyzing the change in a security's price caused by a corrective disclosure and/or the materialization of a concealed risk" using an event study.<sup>90</sup>

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<sup>90</sup> Nye Report, ¶70.

72. I find that there is no statistically significant price decline following any of the alleged corrective disclosures. Thus, application of the proposed common damages methodology in the Nye Report results in zero inflation and zero damages.

Respectfully submitted,

A handwritten signature in black ink, reading "Vinita Juneja", is positioned above a horizontal line.

Vinita Juneja

August 22, 2022



**Appendix I**  
**Vinita Juneja, Ph.D.**  
**Managing Director**  
**Chair of White Collar, Investigations & Enforcement Practice**

**Education**

**Harvard University**

Ph.D., Economics, 1988

Social Sciences and Humanities Research Council of Canada

Doctoral Fellow, 1982-1985

A.M., Economics, 1983

**University of Western Ontario** (now known as **Western University**)

B.A., Honors, Economics, 1980

U.W.O. Continuing Scholar, 1976-1980

Dean's Honors List, 1976-1979

**Professional Experience**

**NERA Economic Consulting**

2017 – Chair, White Collar, Investigations & Enforcement Practice  
2013 – 2017 Co-Chair, White Collar, Investigations & Enforcement Practice  
2006 – 2011 Board of Directors  
2006 – 2009 Chair, Securities and Finance Practice  
2000 – Managing Director (f/k/a/ Senior Vice President)  
Directs projects in the areas of securities economics, finance, and valuation.  
1995 – 2000 Vice President  
1988 – 1995 Senior Consultant  
1988 Senior Economic Analyst  
1985 – 1987 Economic Analyst

**Harvard University**

1983 – 1985 Assistant Head Tutor, Department of Economics  
Helped coordinate and administer the undergraduate program in economics at Harvard College; advised undergraduates on their course of study.  
1982 – 1985 Teaching Fellow, Department of Economics  
Participated in teaching courses on microeconomics, economics of business regulation, and economics of bureaucracy.  
1981 – 1985 Resident Tutor, Cabot House (1982-1985), Nonresident Tutor, Pforzheimer House (1981-1982), Harvard College  
Served as economics tutor, resident assistant and academic advisor.

### **Shell Canada**

- 1981 – 1982 Economic Consultant, Strategic Planning Department  
Responsible for a study of multinationals and foreign investment with focus on the oil and natural gas sectors.
- Summer 1981 Junior Economist, Strategic Planning Department  
Responsible for economic forecasting of the world oil market, policy analysis, and macroeconomic research.

### **University of Western Ontario (now known as Western University)**

- 1979 – 1980 Teaching Assistant, Department of Economics  
Taught microeconomics and labor economics.

### **Toronto Investment Management**

- Summer 1979 Economic Consultant  
Conducted research for various projects, including reports on forecasting and the size of the market sector in Canada.

### **University of Toronto**

- Summer 1979 Teaching Assistant, Department of Economics  
Taught introductory economics.

## **Professional Activities**

Member, FINRA Board of Arbitrators, 2007 – 2009

Member, NASD Board of Arbitrators, 1990 – 2007

## **Testimony (Last Four Years)**

Deposition before the United States District Court for the Southern District of New York, in a confidential matter, 2022.

Deposition before the United States District Court for the Northern District of California, in the matter of *Jonathan Davis and Roei Azar, Individually and on Behalf of All Others Similarly Situated v. Yelp, Inc., Jeremy Stoppelman, Lanny Baker, and Jed Nachman*, 2021.

Cross Examination before the Ontario Superior Court of Justice, in the matter of *The Catalyst Capital Group Inc. and Callidus Capital Corporation v. West Face Capital Inc., Gregory Boland, M5V Advisors Inc. c.o.b. Anson Group Canada, Admiralty Advisors LLC, Frigate Ventures LP, Anson Investments LP, Anson Capital LP, Anson Investments Master Fund LP, AIMF GP, Anson Catalyst Master Fund LP, ACF GP, Moez Kassam, Adam Spears, Sunny Puri, Clarityspring Inc., Nathan Anderson, Bruce Langstaff, Rob Copeland, Kevin Baumann, Jeffrey McFarlane, Darryl Levitt, Richard Molyneux, Gerald Duhamel, George Wesley Voorheis, Bruce Livesey and John Does #4-10*, and the matter of *The Catalyst Capital Group Inc. and Callidus Capital Corporation v. Dow Jones and Company, Rob Copeland, Jacquie McNish and Jeffrey McFarlane*, 2020.

Deposition before the United States District Court, Southern District of Florida, in the matter of *Thomas W. Luczak, v. National Beverage Corp., Nick A. Caporella, and George R. Bracken*, 2020.

Deposition before the United States District Court, Southern District of New York, in the matter of *Securities and Exchange Commission v. Contrarian Press et al*, 2020.

Deposition Testimony before the United States District Court for the District of Colorado in *Peace Officers' Annuity and Benefit Fund of Georgia, et al. vs. DaVita, Inc., et al*, 2020.

Cross Examination before the Supreme Court of British Columbia in the matter between *Annabelle McCorquodale and Robert Cummings, Plaintiffs, and RBC Global Asset Management Inc. and The Royal Trust Company, Defendants*, 2020.

Trial Testimony before the United States District Court, Southern District of New York in the matter of *United States of America vs. Georgios Nikas and Telemaque Lavidas*, 2020.

Deposition before the United States District Court, Southern District of New York in the matter of *U.S. Securities and Exchange Commission v. Penn West Petroleum Ltd., et al.*, 2019.

Deposition before the United States District Court for the Northern District of Indiana in *Rajesh M. Shah et al. vs. Zimmer Biomet Holdings, Inc., et al.*, 2019.

Trial Testimony and Deposition before the United States District Court, Southern District of New York, in *Nasdaq, Inc. v. Exchange Traded Managers Group, LLC, et al.*, 2019 and 2018.

August 2022

**Appendix II**  
**Materials Relied Upon**

Number (1)	Item (2)
<b><u>Legal Filings</u></b>	
1	Declaration of Emma Gilmore in Support of Plaintiffs' Motion for Class Certification, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , Southern District of New York District Court, Case No. 22-cv-2854 (JSR), July 18, 2022.
2	<i>Erica P. John Fund, Inc. v. Halliburton Company</i> , No. 3: 02-CV-1152-M (N.D. Tex. July 25, 2015).
3	<i>Erica P. John Fund, Inc. v. Halliburton Co.</i> ("Halliburton I"), 131 S. Ct. 2179, 2186 (2011).
4	<i>Erica P. John Fund, Inc. v. Halliburton Co.</i> ("Halliburton II"), 134 S. Ct. 2398 (2014).
5	Expert Report of Zachary Nye, Ph.D., <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , Southern District of New York District Court, Case No. 22-cv-2854 (JSR), July 18, 2022, and related produced materials.
6	<i>In re Intuitive Surgical Securities Litigation</i> , No. 5 13-cv-01920-EJD (N.D. Cal. Dec. 22, 2016).
7	<i>In re Moody's Corporation Securities Litigation</i> , 274 F.R.D. 480 (S.D.N.Y. Mar. 31, 2011).
8	Memorandum Of Law In Opposition To Defendants' Motion To Transfer Pursuant To 28 U.S.C. § 1404(A), Or In The Alternative, Dismiss Plaintiffs' Second Amended Class Action Complaint, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , District of New Jersey District Court, Case No. 2:20-cv-08978-ES-MAH, June 1, 2021.
9	Memorandum Of Law In Support Of Defendants' Motion To Transfer Pursuant To 28 U.S.C. § 1404(A), Or In The Alternative, Dismiss Plaintiffs' Second Amended Class Action Complaint, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , District of New Jersey District Court, Case No. 2:20-cv-08978-ES-MAH, April 23, 2021.
10	Opinion, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , District of New Jersey District Court, Case No. :20-8978 (ES) (JRA), March 31, 2022.
11	Opinion and Order, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , Southern District of New York District Court, Case No. 22-cv-2854 (JSR), June 13, 2022.
12	Plaintiffs' Memorandum of Law in Support of Plaintiffs' Motion for Class Certification, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , Southern District of New York District Court, Case No. 22-cv-2854 (JSR), July 18, 2022.
13	Reply Memorandum Of Law In Support Of Defendants' Motion To Transfer Pursuant To 28 U.S.C. § 1404(A), Or In The Alternative, Dismiss Plaintiffs' Second Amended Class Action Complaint, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , District of New Jersey District Court, Case No. 2:20-cv-08978-ES-MAH, July 1, 2021.
14	Third Amended Class Action Complaint for Violations of the Federal Securities Laws, <i>Ali Karimi v. Deutsche Bank Aktiengesellschaft, et al.</i> , Southern District of New York District Court, Case No. 22-cv-2854 (JSR), June 30, 2022.
<b><u>Deposition Transcripts</u></b>	
15	Deposition of Ali Karimi, August 10, 2022.
16	Deposition of Dr. Zachary Nye, August 12, 2022.
17	Deposition of Yun Wang, August 11, 2022.
<b><u>SEC Filings</u></b>	
18	Deutsche Bank Aktiengesellschaft SEC filings from 2016 through 2021, including but not limited to:
19	Deutsche Bank Aktiengesellschaft 20-F dated March 11, 2016.
20	Deutsche Bank Aktiengesellschaft 20-F dated March 20, 2017.

**Appendix II**  
**Materials Relied Upon**

Number (1)	Item (2)
21	Deutsche Bank Aktiengesellschaft Prospectus, dated April 7, 2017.
22	Deutsche Bank Aktiengesellschaft 6-K, dated June 30, 2017.
23	Deutsche Bank Aktiengesellschaft 20-F dated March 16, 2018.
24	Deutsche Bank Aktiengesellschaft 20-F dated March 23, 2019.
25	Deutsche Bank Aktiengesellschaft 20-F dated March 20, 2020.
26	Deutsche Bank Aktiengesellschaft 6-K, dated July 8, 2020.
27	Deutsche Bank Aktiengesellschaft 6-K, dated July 29, 2020.
28	Deutsche Bank Aktiengesellschaft Prospectus I, dated September 10, 2020.
29	Deutsche Bank Aktiengesellschaft Prospectus II, dated September 10, 2020.
30	Deutsche Bank Aktiengesellschaft Filing under Securities Act Rules 163/433 of free writing prospectuses I, dated September 11, 2020.
31	Deutsche Bank Aktiengesellschaft Filing under Securities Act Rules 163/433 of free writing prospectuses II, dated September 11, 2020.
32	Deutsche Bank Aktiengesellschaft 20-F dated March 15, 2021.

**Annual Reports and Other Statements**

33	Deutsche Bank Aktiengesellschaft press releases, conference transcripts, website posts, and other statements from 2014 through 2020 from FactSet Research Systems, Inc. and the Deutsche Bank website, including but not limited to:
34	"Compliance: Conformity with the law and adherence to regulations and standards," [https://web.archive.org/web/20140419162138/https://www.db.com/cr/en/concrete-compliance.htm]. Accessed via the Internet Archive, archive date April 19, 2014.
35	"Compliance: Conformity with the law and adherence to regulations and standards," [https://web.archive.org/web/20170702230115/https://www.db.com/cr/en/concrete-compliance.htm]. Accessed via the Internet Archive, archive date July 2, 2017.
36	Deutsche Bank Aktiengesellschaft Annual Financial Statements and Management Report 2017, March 12, 2018.
37	Deutsche Bank Aktiengesellschaft Annual Financial Statements and Management Report 2018, March 15, 2019.
38	Deutsche Bank Aktiengesellschaft Annual Report 2016, March 20, 2017.
39	Deutsche Bank Aktiengesellschaft Annual Report 2017, March 15, 2018.
40	Deutsche Bank Aktiengesellschaft Annual Report 2018, March 21, 2019.
41	Deutsche Bank Aktiengesellschaft Non-Financial Report 2017, March 12, 2018.
42	Deutsche Bank Aktiengesellschaft Non-Financial Report 2018, March 15, 2019.
43	Deutsche Bank Aktiengesellschaft Non-Financial Report 2019, March 13, 2020.
44	Deutsche Bank Anti-Financial Crime, "Deutsche Bank Excerpt of globally applicable Anti-Money Laundering and Anti-Financial Crime Standard," [https://www.db.com/files/documents/Excerpt-of-globally-applicable-Anti-Money-Laundering-and-Anti-Financial-Crime-Standard.pdf?language_id=1].
45	"Share Information," [https://investor-relations.db.com], 2022.

**News Articles**

46	News stories from German- and English-language popular press on Dow Jones Factiva and Bloomberg regarding or related to Deutsche Bank Aktiengesellschaft from 2017 through 2020, including but not limited to:
47	"Deutsche Bank Accounting Head is Aim of Wirecard Complaint," <i>Bloomberg Law</i> , June 26, 2020.

**Appendix II**  
**Materials Relied Upon**

Number (1)	Item (2)
48	"Deutsche Bank Execs Missed Money Laundering Red Flags," <i>BuzzFeed News</i> , September 20, 2020.
49	"Deutsche Bank Fined \$150M for Epstein, Partner Bank Lapses," <i>Law360</i> , July 7, 2020.
50	"Deutsche Bank Legal Outlook," <i>Bloomberg Intelligence</i> , July 13, 2020.
51	"Deutsche Bank revealed as behind €150m loan to Wirecard founder," <i>Financial Times</i> , March 25, 2019.
52	"Deutsche Bank to Pay \$583K to End Ukraine Sanctions Probe," <i>Law360</i> , September 9, 2020.
53	"EXCLUSIVE-Deutsche Bank reports show chinks in money laundering armour," <i>Reuters News</i> , August 3, 2018.
54	"Germany says FinCEN money laundering revelations are not new," <i>Reuters News</i> , September 21, 2020.
55	"JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank," <i>Bloomberg Law</i> , July 9, 2020.
56	"Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained," <i>Dow Jones Institutional News</i> , June 23, 2020.
57	"Slap in the face from America," <i>Sueddeutsche Zeitung</i> , May 13, 2020.
58	"Singapore, Hong Kong Top Asia Destinations for Suspect Funds," <i>Bloomberg Law</i> , September 22, 2020.
59	"The 'mirror' trades that caught Deutsche in Russian web," <i>Reuters News</i> , January 31, 2017.
60	"These are the Deutsche Bank Executives Responsible for Serving Jeffrey Epstein," <i>New York Times</i> , July 13, 2020.
61	"Virgin Islands government subpoenas multiple banks for Jeffrey Epstein's financial records," <i>ABC News</i> , July 28, 2020.

**Equity Analyst and Credit Agency Reports**

62	Equity analyst and credit rating agency reports regarding or related to Deutsche Bank Aktiengesellschaft from 2017 through 2020 from Refinitiv Eikon and counsel, including but not limited to:
63	Autonomous, "Global Banks Roadmap - Bankosaurus Techs: 'Show Me' Time," July 20, 2020.
64	Autonomous, "Hamburg Commercial Bank - Walking the Walk," September 15, 2020.
65	Bank of America Global Research, "Deutsche Bank: 2Q20 a little better," July 29, 2020.
66	Bank of America Global Research, "Deutsche Bank IB moderating 2Q20 losses," June 30, 2020.
67	Bank of America Global Research, "European Banks Strategy - Conference feedback: day 1," September 22, 2020.
68	Bank of America Global Research, "European Banks Strategy - Q2: learnings from America," July 16, 2020.
69	Barclays, "European Banks: Which banks could see more pressure on capital from rating migration?" September 9, 2020.
70	Barclays, "European IBs: Increasing Q220 Trading Estimates," July 20, 2020.
71	Barclays, "Increasing Q220 Trading Estimates," July 20, 2020.
72	Barclays, "Deutsche Bank: Q220 Results - Mixed trends," July 29, 2020.
73	Barclays, "Deutsche Bank: Q220 results - franchise challenges," July 29, 2020.
74	Berenberg, "Deutsche Bank AG (DBK GY): Buoyancy likely to prove short lived," August 3, 2020.
75	Berenberg, "European banks: badwill hunting," September 16, 2020.
76	Berenberg, "Loan losses revisited: gains beyond the pain," July 1, 2020.
77	Citi Research, "Deutsche Bank: Alert: Thoughts Post 2Q20 Call; More Questions Than Answers," July 29, 2020.
78	Citi Research, "Deutsche Bank: Results: 2Q20 - Solid Results But Revenues to 'Normalize,'" July 29, 2020.
79	Citi Research, "Deutsche Bank: Updating Our Model," July 29, 2020.
80	Commerzbank, "Deutsche Bank AG: Q2 due 29 July: Revenue growth path in core bank to continue," July 15, 2020.
81	Commerzbank, "Deutsche Bank AG: Q2: More light than shadow," July 29, 2020.
82	Commerzbank, "Financials Insight: TLTRO III - now simply a subsidy for banks?" July 9, 2020.
83	Credit Suisse, "Deutsche Bank: 2Q20 first look: In line with preannouncement," July 29, 2020.



**Appendix II**  
**Materials Relied Upon**

<b>Number</b> <b>(1)</b>	<b>Item</b> <b>(2)</b>
84	Credit Suisse, "Deutsche Bank: Management comments on the 2Q20 call," July 29, 2020.
85	Credit Suisse, "Deutsche Bank: Post 2Q20: Still little reason to raise revenues," July 30, 2020.
86	Credit Suisse, "EU investment banks: US read-through positive for Q2 earnings," July 17, 2020.
87	Exane BNP Paribas, "Deutsche Bank: Stable capital, but unclear earnings power," July 29, 2020.
88	Exane BNP Paribas, "Investment Banks: Raising estimates ahead of 2Q reporting," July 9, 2020.
89	Exane BNP Paribas, "Investment Banks: Reviewing Remuneration," June 25, 2020.
90	Goldman Sachs, "CaixaBank/Bankia: Reassuringly logical," September 21, 2020.
91	Goldman Sachs, "Deutsche Bank: 2Q20 first look: another (small) quarterly loss," July 29, 2020.
92	Goldman Sachs, "Deutsche Bank: Five key takeaways from the conference call," July 29, 2020.
93	HSBC, "Investment Banking Monitor Quarterly: Q2 2020: Go with the flow," July 14, 2020.
94	JPMorgan, "Deutsche Bank: Results ahead of expectations, but with 2H revenue normalisation expected: 4% L-T RoTE unchanged," July 29, 2020.
95	JPMorgan Cazenove, "Commerzbank: 1Q results show revenue strength but difficult macro to weigh on already low profitability," May 13, 2020.
96	JPMorgan Cazenove, "Global Banks: Read-across from US results: positive for IBs but Europe likely to disappoint on provisions/capital build," July 15, 2020.
97	JPMorgan Cazenove, "Global Investment Banks: 50bps+ CET1 capital build by GS in 2Q the positive surprise; both GS and MS to maintain dividends," June 30, 2020.
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107	Kepler Cheuvreux, "Pre-close sell-side briefing feedback," June 30, 2020.
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111	Mediobanca Securities, "Deutsche Bank: Clock is FICC-ing," July 30, 2020.
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**Appendix II**  
**Materials Relied Upon**

<b>Number</b> <b>(1)</b>	<b>Item</b> <b>(2)</b>
120	Morningstar Equity Research, "Deutsche Bank AG DBK (XETR): European Banks' U.S. Divisions Fare Well in Fed's 2020 Stress Tests," June 26, 2020.
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122	Morningstar Equity Research, "Deutsche Bank AG DBK (XETR): Impact of Coronavirus on Credit Quality, Capital Adequacy, and Profitability Is Manageable," July 6, 2020.
123	Morningstar Equity Research, "Deutsche Bank AG DB (NYSE): Investment Bank Shines in Second Quarter, a Positive Sign for Deutsche Bank," July 29, 2020.
124	Morningstar Equity Research, "Deutsche Bank AG DBK (XETR): Investment Bank Shines in Second Quarter, a Positive Sign for Deutsche Bank," July 29, 2020.
125	Morningstar Equity Research, "Deutsche Bank AG DB (NYSE): We Increase Our Fair Value Estimate on More Positive Revenue Outlook," July 29, 2020.
126	Morningstar Equity Research, "Deutsche Bank AG DBK (XETR): We Increase Our Fair Value Estimate on More Positive Revenue Outlook," July 29, 2020.
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141	Societe Generale, "US Banks: From strength to strength - Increasing target prices for MS and GS," August 4, 2020.
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**Market Data**

148	Daily common stock closing price and trading volume from FactSet Research Systems, Inc.
149	Intraday common stock price from Tick Data.
150	"Trading hours and trading calendar," [https://www.boerse-frankfurt.de/en/know-how/trading-calendar], 2022.



**Appendix II**  
**Materials Relied Upon**

<b>Number</b> <b>(1)</b>	<b>Item</b> <b>(2)</b>
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To the extent not mentioned above, all sources, references, and citations in the report and appendices.

**Appendix III**  
**Deutsche Bank AG**  
**Calculation of Exchange Volume**

<b>Week End Date</b>	<b>Weekly Total Volume (Xetra)</b>	<b>Weekly Total Volume (US)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
3/24/2017	143,303,230	67,055,287
3/31/2017	86,859,130	47,338,234
4/7/2017	111,447,650	34,384,214
4/14/2017	54,372,190	22,735,560
4/21/2017	62,237,140	29,754,939
4/28/2017	115,056,390	49,216,257
5/5/2017	49,289,266	24,019,400
5/12/2017	70,277,060	17,906,583
5/19/2017	77,348,280	30,690,993
5/26/2017	48,995,661	20,677,427
6/2/2017	68,475,683	23,315,440
6/9/2017	47,081,740	16,842,466
6/16/2017	88,033,487	22,375,031
6/23/2017	57,265,350	12,807,146
6/30/2017	73,328,327	25,439,033
7/7/2017	68,884,060	17,687,864
7/14/2017	57,043,009	14,239,082
7/21/2017	56,922,524	12,615,185
7/28/2017	85,984,710	26,306,756
8/4/2017	62,121,350	16,038,651
8/11/2017	74,406,600	23,985,970
8/18/2017	63,191,599	23,684,509
8/25/2017	54,888,779	19,579,774
9/1/2017	52,413,939	14,727,482
9/8/2017	53,241,901	15,814,991
9/15/2017	89,716,210	16,449,763
9/22/2017	58,370,085	15,933,087
9/29/2017	69,387,083	33,572,117
10/6/2017	47,354,710	15,687,471
10/13/2017	51,219,290	15,652,062
10/20/2017	43,995,122	14,740,813
10/27/2017	89,594,879	27,914,630
11/3/2017	74,723,060	21,245,403
11/10/2017	97,448,010	26,443,925
11/17/2017	104,586,180	26,630,094
11/24/2017	61,120,825	11,058,195
12/1/2017	64,305,070	19,329,284
12/8/2017	67,792,440	17,521,677
12/15/2017	68,706,645	13,442,237
12/22/2017	63,598,026	19,040,036
12/29/2017	19,616,135	7,301,215

<b>Week End Date</b>	<b>Weekly Total Volume (Xetra)</b>	<b>Weekly Total Volume (US)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
1/5/2018	79,558,387	27,469,245
1/12/2018	97,968,990	21,820,756
1/19/2018	56,087,430	10,638,387
1/26/2018	76,810,320	19,826,285
2/2/2018	109,833,040	30,149,529
2/9/2018	151,061,640	50,372,464
2/16/2018	99,282,160	21,185,719
2/23/2018	60,244,371	15,378,771
3/2/2018	62,032,323	22,175,984
3/9/2018	62,621,954	17,174,663
3/16/2018	67,108,544	17,304,216
3/23/2018	113,643,921	40,385,517
3/30/2018	67,032,210	22,079,393
4/6/2018	65,541,590	19,246,345
4/13/2018	65,986,345	16,909,201
4/20/2018	49,560,318	14,136,355
4/27/2018	98,054,566	21,954,839
5/4/2018	46,382,480	11,763,943
5/11/2018	41,751,237	12,449,560
5/18/2018	80,501,840	23,226,609
5/25/2018	97,330,947	30,669,263
6/1/2018	189,146,710	68,676,670
6/8/2018	111,277,840	37,764,023
6/15/2018	101,343,590	20,075,783
6/22/2018	78,123,180	22,309,707
6/29/2018	99,645,210	28,991,811
7/6/2018	98,586,126	20,661,961
7/13/2018	72,190,990	21,249,997
7/20/2018	109,338,290	40,289,698
7/27/2018	66,576,330	31,866,365
8/3/2018	75,169,138	28,526,673
8/10/2018	65,753,670	23,691,746
8/17/2018	76,887,070	28,965,006
8/24/2018	47,388,817	17,371,871
8/31/2018	52,012,948	17,389,122
9/7/2018	69,011,855	14,015,204
9/14/2018	70,456,430	27,472,972
9/21/2018	168,914,375	22,122,947
9/28/2018	66,283,990	17,384,054
10/5/2018	54,619,570	22,306,710
10/12/2018	64,941,010	21,918,248
10/19/2018	63,088,711	25,195,847
10/26/2018	93,907,870	37,453,045
11/2/2018	75,415,380	29,684,953
11/9/2018	52,363,584	15,621,448

<b>Week End Date</b>	<b>Weekly Total Volume (Xetra)</b>	<b>Weekly Total Volume (US)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
11/16/2018	56,602,612	21,179,306
11/23/2018	62,294,042	19,400,146
11/30/2018	73,466,485	35,273,340
12/7/2018	77,754,760	29,349,495
12/14/2018	92,612,660	47,112,331
12/21/2018	102,825,200	37,616,980
12/28/2018	27,190,721	33,424,307
1/4/2019	45,736,310	23,157,063
1/11/2019	68,373,270	20,641,573
1/18/2019	92,647,500	36,373,389
1/25/2019	64,991,093	14,838,784
2/1/2019	78,694,004	31,580,693
2/8/2019	71,783,150	26,333,571
2/15/2019	61,995,151	20,366,399
2/22/2019	46,265,218	13,536,364
3/1/2019	64,042,078	21,764,476
3/8/2019	64,444,055	21,714,524
3/15/2019	76,246,783	25,307,186
3/22/2019	90,066,730	35,129,513
3/29/2019	73,482,350	39,598,407
4/5/2019	69,308,330	27,216,022
4/12/2019	69,378,280	24,578,441
4/19/2019	48,160,987	20,555,096
4/26/2019	77,782,030	28,770,815
5/3/2019	50,054,105	15,587,802
5/10/2019	75,889,910	23,947,611
5/17/2019	64,340,480	22,569,796
5/24/2019	81,221,280	22,533,332
5/31/2019	71,041,753	22,731,952
6/7/2019	86,030,520	27,526,637
6/14/2019	48,972,971	22,692,600
6/21/2019	105,226,140	25,941,770
6/28/2019	69,816,978	28,034,047
7/5/2019	75,840,960	21,305,844
7/12/2019	118,025,640	48,475,393
7/19/2019	73,215,660	29,598,969
7/26/2019	91,587,286	28,599,387
8/2/2019	82,361,662	28,940,152
8/9/2019	92,378,790	30,287,345
8/16/2019	127,509,528	63,121,100
8/23/2019	67,186,452	36,573,977
8/30/2019	53,017,300	19,715,598
9/6/2019	61,448,601	22,117,430
9/13/2019	111,038,430	38,710,563
9/20/2019	72,740,710	27,197,807

<b>Week End Date</b>	<b>Weekly Total Volume (Xetra)</b>	<b>Weekly Total Volume (US)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
9/27/2019	70,814,110	27,031,331
10/4/2019	55,190,100	24,005,927
10/11/2019	66,868,999	27,498,380
10/18/2019	76,918,160	24,862,697
10/25/2019	60,381,508	28,239,355
11/1/2019	90,580,579	37,902,940
11/8/2019	78,960,990	26,495,912
11/15/2019	64,557,390	19,795,205
11/22/2019	52,050,634	19,089,469
11/29/2019	42,808,792	12,443,075
12/6/2019	61,191,051	17,827,502
12/13/2019	77,800,936	28,621,454
12/20/2019	80,956,800	17,577,170
12/27/2019	18,161,951	8,980,216
1/3/2020	42,917,598	22,255,194
1/10/2020	85,253,920	27,127,903
1/17/2020	67,057,230	23,241,507
1/24/2020	73,797,670	21,847,665
1/31/2020	106,631,050	35,061,970
2/7/2020	124,678,780	45,506,840
2/14/2020	98,185,800	35,942,557
2/21/2020	87,417,930	31,432,709
2/28/2020	164,021,976	57,254,493
3/6/2020	162,506,500	60,866,620
3/13/2020	287,782,280	70,293,440
3/20/2020	185,509,637	66,438,580
3/27/2020	134,510,650	45,771,638
4/3/2020	115,153,450	27,901,625
4/10/2020	84,889,960	25,457,801
4/17/2020	78,526,930	24,006,354
4/24/2020	87,482,130	28,290,685
5/1/2020	128,445,320	41,483,091
5/8/2020	74,699,802	25,237,688
5/15/2020	83,848,340	26,260,809
5/22/2020	80,920,181	28,509,889
5/29/2020	105,632,952	32,966,094
6/5/2020	93,379,720	35,196,704
6/12/2020	113,240,300	42,166,549
6/19/2020	101,432,340	23,421,560
6/26/2020	65,249,000	25,469,543
7/3/2020	58,317,710	17,199,627
7/10/2020	64,148,470	20,975,646
7/17/2020	65,745,780	22,556,249
7/24/2020	66,073,068	16,532,554
7/31/2020	75,762,842	27,437,949

<b>Week End Date</b>	<b>Weekly Total Volume (Xetra)</b>	<b>Weekly Total Volume (US)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
8/7/2020	45,551,198	13,015,924
8/14/2020	46,906,509	13,341,892
8/21/2020	34,256,071	10,700,649
8/28/2020	51,543,294	16,770,518
9/4/2020	65,062,330	18,287,453
9/11/2020	54,776,776	17,571,455
9/18/2020	62,501,431	12,549,324

**Average Weekly Trading Volume**

*= Average[column]*                      78,038,186                      25,990,546

**Xetra Share of Average Weekly Trading Volume:**

*= Average[2] / (Average[2] + Average[3])*                      75%

**Notes and Sources:**

Data are from FactSet Research Systems, Inc.

Weekly volume includes days while only one exchange is active. Trading volumes from pre- and post-market trading are not included.

**Appendix IV**  
**Deutsche Bank AG**  
**Summary of Market-Adjusted Price Reactions on the Xetra Exchange**  
**on Alleged Disclosure Dates<sup>1</sup>**

Date	Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company-Specific Return	t-stat Company-Specific Return <sup>3</sup>	Critical t-value (Holm-Bonferroni)	Significant at 5% Level? <sup>4</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1				(3) - (6)			
1.	<i>"Slap in the face from America" (Sueddeutsche Zeitung). Published May 13, 2020, 6:00 PM CET.</i>								
	5/13/2020	€ 6.09							
	5/14/2020	€ 6.05	(0.007)	(0.017)	0.023	(0.003)	(0.004)	(0.174)	No
2.	<i>"Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained" (Dow Jones Institutional News). Published June 23, 2020, 10:04 AM CET.</i>								
	6/22/2020	€ 8.31							
	6/23/2020	€ 8.55	0.030	0.015	(0.004)	0.021	0.009	0.408	No
3.	<i>"Deutsche Bank Accounting Head Is Aim of Wirecard Complaint" (Bloomberg Law). Published June 26, 2020, 4:10 PM CET.</i>								
	6/25/2020	€ 8.39							
	6/26/2020	€ 8.13	(0.030)	(0.002)	(0.022)	(0.021)	(0.009)	(0.408)	No
4.	<i>"Deutsche Bank Fined \$150M For Epstein, Partner Bank Lapses" (Law360). Published July 7, 2020, 5:07 PM CET.</i>								
	7/6/2020	€ 8.81							
	7/7/2020	€ 8.81	(0.000)	(0.003)	(0.010)	(0.013)	0.012	0.552	No
5.	<i>"JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank" (Bloomberg Law). Published July 9, 2020, 10:00 AM CET.</i>								
	7/8/2020	€ 8.71							
	7/9/2020	€ 8.61	(0.011)	(0.006)	(0.005)	(0.013)	0.002	0.086	No
6.	<i>"Deutsche Bank Litigation Research" (Bloomberg Intelligence), published July 13, 2020, 12:07 PM CET.</i>								
	7/10/2020	€ 8.83							
	7/13/2020	€ 8.75	(0.008)	0.020	(0.003)	0.030	(0.038)	(1.743)	No
7.	<i>"Virgin Islands government subpoenas multiple banks for Jeffrey Epstein's financial records" (ABC News). Published July 28, 2020, 11:10 AM CET.</i>								
	7/27/2020	€ 8.09							
	7/28/2020	€ 8.00	(0.011)	0.005	(0.003)	0.005	(0.016)	(0.710)	No
8.	<i>"Deutsche Bank To Pay \$583K To End Ukraine Sanctions Probe" (Law360). Published September 10, 2020, 1:55 AM CET.</i>								
	9/9/2020	€ 8.01							
	9/10/2020	€ 8.00	(0.002)	0.002	(0.004)	0.000	(0.002)	(0.113)	No
9.	<i>"Deutsche Bank Execs Missed Money Laundering Red Flags" (BuzzFeed News). Published September 20, 2020, 7:01 PM CET.</i>								
	9/18/2020	€ 7.67							
	9/21/2020	€ 7.00	(0.088)	(0.029)	(0.011)	(0.054)	(0.034)	(1.520)	No
10.	<i>"Singapore, Hong Kong Top Asia Destinations for Suspect Funds" (Bloomberg Law), published September 22, 2020, 1:04 PM CET.</i>								
	9/21/2020	€ 7.00							
	9/22/2020	€ 6.93	(0.009)	0.009	(0.016)	0.001	(0.010)	(0.461)	No

**Notes and Sources:**

Data were obtained from Nye Report, Exhibit 11E except where indicated.

<sup>1</sup> Price reactions based on Nye Report, Exhibit 11E.

<sup>2</sup> Stock price data were obtained from FactSet Research Systems, Inc.

<sup>3</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>4</sup> Significance is based on the company-specific return's t-statistic. Significance levels have been adjusted to correct for multiple comparisons using the Holm-Bonferroni method, in which the t-statistics from a set of statistical tests are ranked from lowest to highest in magnitude, and the desired overall level of significance (5%) is divided by the rank to compute the p-value necessary for statistical significance.

**Appendix V**  
**Deutsche Bank AG**  
**Summary of Market-Adjusted Price Reactions on the NYSE**  
**on Alleged Disclosure Dates<sup>1</sup>**

Date	Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company-Specific Return	t-stat Company-Specific Return <sup>3</sup>	Critical t-value (Holm-Bonferroni)	Significant at 5% Level? <sup>4</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1				(3) - (6)			
1.	<i>"Slap in the face from America" (Sueddeutsche Zeitung). Published May 13, 2020, 12:00 AM ET.</i>								
	5/12/2020	\$ 6.91							
	5/13/2020	\$ 6.60	(0.045)	(0.017)	(0.008)	(0.030)	(0.015)	(0.698)	No
2.	<i>"Munich Prosecutor Officer: Ex-Wirecard CEO Braun Detained" (Dow Jones Institutional News). Published June 23, 2020, 4:04 AM ET.</i>								
	6/22/2020	\$ 9.35							
	6/23/2020	\$ 9.55	0.021	0.008	0.002	0.015	0.007	0.311	No
3.	<i>"Deutsche Bank Accounting Head Is Aim of Wirecard Complaint" (Bloomberg Law). Published June 26, 2020, 10:10 AM ET.</i>								
	6/25/2020	\$ 9.57							
	6/26/2020	\$ 9.00	(0.060)	(0.017)	(0.024)	(0.042)	(0.017)	(0.786)	No
4.	<i>"Deutsche Bank Fined \$150M For Epstein, Partner Bank Lapses" (Law360). Published July 7, 2020, 11:07 AM ET.</i>								
	7/6/2020	\$ 9.95							
	7/7/2020	\$ 9.82	(0.013)	(0.009)	(0.014)	(0.024)	0.011	0.488	No
5.	<i>"JPMorgan Dropped Accounts That Became Bad News for Deutsche Bank" (Bloomberg Law). Published July 9, 2020, 4:00 AM ET.</i>								
	7/8/2020	\$ 10.00							
	7/9/2020	\$ 9.72	(0.028)	(0.005)	(0.014)	(0.017)	(0.011)	(0.489)	No
6.	<i>"Deutsche Bank Litigation Research" (Bloomberg Intelligence). Published July 13, 2020, 6:07 PM ET.</i>								
	7/10/2020	\$ 10.10							
	7/13/2020	\$ 9.73	(0.037)	(0.003)	0.009	0.005	(0.042)	(1.917)	No
7.	<i>"Virgin Islands government subpoenas multiple banks for Jeffrey Epstein's financial records" (ABC News). Published July 28, 2020, 5:10 AM ET.</i>								
	7/27/2020	\$ 9.55							
	7/28/2020	\$ 9.45	(0.010)	(0.005)	0.011	0.002	(0.013)	(0.586)	No
8.	<i>"Deutsche Bank To Pay \$583K To End Ukraine Sanctions Probe" (Law360). Published September 9, 2020, 7:55 PM ET.</i>								
	9/9/2020	\$ 9.42							
	9/10/2020	\$ 9.35	(0.007)	(0.011)	0.005	(0.011)	0.003	0.148	No
9.	<i>"Deutsche Bank Execs Missed Money Laundering Red Flags" (BuzzFeed News). Published September 20, 2020, 1:01 PM ET.</i>								
	9/18/2020	\$ 9.09							
	9/21/2020	\$ 8.34	(0.083)	(0.016)	(0.011)	(0.030)	(0.052)	(2.440)	No
10.	<i>"Singapore, Hong Kong Top Asia Destinations for Suspect Funds" (Bloomberg Law), published September 22, 2020, 7:04 PM ET.</i>								
	9/21/2020	\$ 8.34							
	9/22/2020	\$ 8.14	(0.024)	0.006	(0.023)	(0.008)	(0.016)	(0.759)	No

**Notes and Sources:**

Data were obtained from Nye Report, Exhibit 11B except where indicated.

<sup>1</sup> Price reactions based on the Nye Report, Exhibit 11B.

<sup>2</sup> Stock price data were obtained from FactSet Research Systems, Inc.

<sup>3</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>4</sup> Significance is based on the company-specific return's t-statistic. Significance levels have been adjusted to correct for multiple comparisons using the Holm-Bonferroni method, in which the t-statistics from a set of statistical tests are ranked from lowest to highest in magnitude, and the desired overall level of significance (5%) is divided by the rank to compute the p-value necessary for statistical significance.



**Appendix VI**  
**Deutsche Bank AG**  
**Summary of Market-Adjusted Price Reactions on the Xetra Exchange**  
**on Alleged Misrepresentation Dates<sup>1</sup>**

	Date	Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company-Specific Return	t-stat Company-Specific Return <sup>3</sup>	Critical t-value (Holm-Bonferroni)	Significant at 5% Level? <sup>4</sup>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1					(3) - (6)			
1.		<i>Annual Report 2016. Published March 14, 2017.</i>								
	3/13/2017	€ 16.39								
	3/14/2017	€ 16.19	(0.012)	(0.004)	(0.001)	(0.013)	0.001	0.046	2.255	No
2.		<i>2016 20-F. Published March 20, 2017, 2:27 PM CET.</i>								
	3/17/2017	€ 15.94								
	3/20/2017	€ 15.35	(0.037)	(0.002)	(0.005)	(0.012)	(0.025)	(1.382)	(3.040)	No
3.		<i>Website post on July 2, 2017.</i>								
	6/30/2017	€ 15.53								
	7/3/2017	€ 16.10	0.037	0.004	0.016	0.035	0.002	0.109	2.517	No
4.		<i>Website post on July 10, 2017.</i>								
	7/7/2017	€ 16.68								
	7/10/2017	€ 16.58	(0.006)	0.003	(0.007)	(0.001)	(0.005)	(0.323)	(2.798)	No
5.		<i>Non-Financial Report 2017. Published March 12, 2018.</i>								
	3/9/2018	€ 13.04								
	3/12/2018	€ 13.06	0.002	0.006	(0.005)	0.001	0.001	0.044	1.970	No
6.		<i>Website post on March 15, 2018.</i>								
	3/14/2018	€ 12.71								
	3/15/2018	€ 12.77	0.005	(0.001)	0.004	0.001	0.004	0.267	2.714	No
7.		<i>2017 20-F. Published March 16, 2018, 5:53 PM CET.</i>								
	3/16/2018	€ 12.84								
	3/19/2018	€ 12.55	(0.023)	(0.013)	0.003	(0.016)	(0.007)	(0.530)	(2.919)	No
8.		<i>Website post on July 2, 2018.</i>								
	6/29/2018	€ 9.22								
	7/2/2018	€ 9.14	(0.009)	(0.012)	(0.008)	(0.025)	0.016	1.136	3.023	No
9.		<i>Website post on July 10, 2018.</i>								
	7/9/2018	€ 9.79								
	7/10/2018	€ 9.74	(0.005)	0.003	(0.004)	(0.002)	(0.003)	(0.240)	(2.660)	No
10.		<i>Public statement on August 3, 2018 (Reuters News, "EXCLUSIVE-Deutsche Bank reports show chinks in money laundering armour," August 3, 2018 10:15 AM CET).</i>								
	8/2/2018	€ 10.73								
	8/3/2018	€ 10.76	0.003	0.005	0.003	0.007	(0.004)	(0.271)	(2.759)	No
11.		<i>Website post on September 27, 2018.</i>								
	9/26/2018	€ 10.24								
	9/27/2018	€ 10.21	(0.003)	(0.003)	(0.006)	(0.011)	0.008	0.543	2.943	No
12.		<i>Website post on September 30, 2018.</i>								
	9/28/2018	€ 9.83								
	10/1/2018	€ 9.71	(0.012)	0.003	(0.005)	(0.004)	(0.008)	(0.528)	(2.893)	No
13.		<i>Non-Financial Report 2018. Published March 15, 2019.</i>								
	3/14/2019	€ 7.89								
	3/15/2019	€ 7.82	(0.009)	0.007	(0.004)	0.003	(0.013)	(0.797)	(2.986)	No
14.		<i>Annual Report 2018. Published March 21, 2019.</i>								
	3/20/2019	€ 7.75								
	3/21/2019	€ 7.44	(0.041)	0.006	(0.034)	(0.038)	(0.003)	(0.220)	(2.597)	No
15.		<i>2018 20-F. Published March 23, 2019, 12:15 AM CET.</i>								
	3/22/2019	€ 7.28								
	3/25/2019	€ 7.23	(0.007)	(0.006)	0.004	(0.006)	(0.001)	(0.081)	(2.411)	No
16.		<i>Website post on July 2, 2019.</i>								
	7/1/2019	€ 6.76								
	7/2/2019	€ 6.75	(0.000)	0.000	(0.005)	(0.007)	0.006	0.408	2.834	No
17.		<i>Website post on July 10, 2019.</i>								
	7/9/2019	€ 6.51								
	7/10/2019	€ 6.53	0.004	0.004	(0.008)	(0.005)	0.009	0.594	2.965	No
18.		<i>Website post on September 27, 2019.</i>								
	9/26/2019	€ 6.80								
	9/27/2019	€ 6.93	0.019	(0.000)	0.005	0.005	0.014	0.889	3.005	No
19.		<i>Website post on September 30, 2019.</i>								
	9/27/2019	€ 6.93								
	9/30/2019	€ 6.87	(0.008)	0.001	(0.000)	(0.000)	(0.008)	(0.512)	(2.865)	No

Date	Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company-Specific Return	t-stat Company-Specific Return <sup>3</sup>	Critical t-value (Holm-Bonferroni)	Significant at 5% Level? <sup>4</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1				(3) - (6)			
20.	<i>Non-Financial Report 2019. Published March 13, 2020.</i>								
3/12/2020	€ 4.87								
3/13/2020	€ 5.11	0.048	0.000	0.056	0.077	(0.029)	(1.692)	(3.056)	No

**Notes and Sources:**

Data were obtained from Nye Report, Exhibit 11E except where indicated.

Timestamps are given in Central European Time where available.

<sup>1</sup> Price reactions based on the Nye Report, Exhibit 11E.

<sup>2</sup> Stock price data were obtained from FactSet Research Systems, Inc.

<sup>3</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>4</sup> Significance is based on the company-specific return's t-statistic. Significance levels have been adjusted to correct for multiple comparisons using the Holm-Bonferroni method, in which the t-statistics from a set of statistical tests are ranked from lowest to highest in magnitude, and the desired overall level of significance (5%) is divided by the rank to compute the p-value necessary for statistical significance.

**Appendix VII**  
**Deutsche Bank AG**  
**Summary of Market-Adjusted Price Reactions on the NYSE**  
**on Alleged Misrepresentation Dates<sup>1</sup>**

		Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company- Specific Return	t-stat Company- Specific Return <sup>3</sup>	Critical t- value (Holm- Bonferroni)	Significant at 5% Level? <sup>4</sup>
	Date	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1					(3) - (6)			
1.		<i>Annual Report 2016. Published March 14, 2017.</i>								
	3/13/2017	\$ 17.51								
	3/14/2017	\$ 17.19	(0.018)	(0.004)	0.001	(0.009)	(0.009)	(0.506)	(2.892)	No
2.		<i>2016 20-F. Published March 20, 2017, 9:27 AM ET.</i>								
	3/17/2017	\$ 16.98								
	3/20/2017	\$ 16.40	(0.034)	(0.001)	(0.010)	(0.021)	(0.013)	(0.716)	(2.942)	No
3.		<i>Website post on July 2, 2017.</i>								
	6/30/2017	\$ 17.79								
	7/3/2017	\$ 18.15	0.020	0.002	0.014	0.029	(0.009)	(0.492)	(2.864)	No
4.		<i>Website post on July 10, 2017.</i>								
	7/7/2017	\$ 19.05								
	7/10/2017	\$ 18.97	(0.004)	0.002	(0.005)	(0.002)	(0.003)	(0.146)	(2.596)	No
5.		<i>Non-Financial Report 2017. Published March 12, 2018.</i>								
	3/9/2018	\$ 16.12								
	3/12/2018	\$ 16.11	(0.001)	0.002	(0.003)	(0.000)	(0.001)	(0.040)	(2.255)	No
6.		<i>Website post on March 15, 2018.</i>								
	3/14/2018	\$ 15.70								
	3/15/2018	\$ 15.70	0.000	(0.001)	0.003	0.002	(0.002)	(0.146)	(2.516)	No
7.		<i>2017 20-F. Published March 16, 2018, 12:53 PM ET.</i>								
	3/15/2018	\$ 15.70								
	3/16/2018	\$ 15.82	0.008	0.000	0.003	0.004	0.004	0.293	2.798	No
8.		<i>Website post on July 2, 2018.</i>								
	6/29/2018	\$ 10.62								
	7/2/2018	\$ 10.64	0.002	(0.003)	0.006	(0.001)	0.003	0.198	2.713	No
9.		<i>Website post on July 10, 2018.</i>								
	7/9/2018	\$ 11.54								
	7/10/2018	\$ 11.43	(0.010)	0.002	(0.011)	(0.009)	(0.000)	(0.025)	(1.970)	No
10.		<i>Public statement on August 3, 2018 (Reuters News, "EXCLUSIVE-Deutsche Bank reports show chinks in money laundering armour," August 3, 2018 4:15 AM ET).</i>								
	8/2/2018	\$ 12.54								
	8/3/2018	\$ 12.50	(0.003)	0.004	0.003	0.008	(0.011)	(0.765)	(2.985)	No
11.		<i>Website post on September 27, 2018.</i>								
	9/26/2018	\$ 11.90								
	9/27/2018	\$ 11.81	(0.008)	(0.000)	(0.003)	(0.005)	(0.002)	(0.168)	(2.660)	No
12.		<i>Website post on September 30, 2018.</i>								
	9/28/2018	\$ 11.36								
	10/1/2018	\$ 11.25	(0.010)	0.002	0.000	0.002	(0.011)	(0.812)	(3.004)	No
13.		<i>Non-Financial Report 2018. Published March 15, 2019.</i>								
	3/14/2019	\$ 8.91								
	3/15/2019	\$ 8.88	(0.003)	0.006	(0.000)	0.008	(0.011)	(0.669)	(2.918)	No
14.		<i>Annual Report 2018. Published March 21, 2019.</i>								
	3/20/2019	\$ 8.78								
	3/21/2019	\$ 8.43	(0.040)	0.008	(0.022)	(0.018)	(0.022)	(1.327)	(3.022)	No
15.		<i>2018 20-F. Published March 22, 2019, 7:15 PM ET.</i>								
	3/22/2019	\$ 8.21								
	3/25/2019	\$ 8.17	(0.005)	(0.004)	(0.001)	(0.009)	0.004	0.253	2.758	No
16.		<i>Website post on July 2, 2019.</i>								
	7/1/2019	\$ 7.64								
	7/2/2019	\$ 7.59	(0.007)	0.003	(0.006)	(0.004)	(0.002)	(0.139)	(2.411)	No
17.		<i>Website post on July 10, 2019.</i>								
	7/9/2019	\$ 7.28								
	7/10/2019	\$ 7.40	0.016	0.003	(0.008)	(0.007)	0.024	1.411	3.039	No
18.		<i>Website post on September 27, 2019.</i>								
	9/26/2019	\$ 7.42								
	9/27/2019	\$ 7.56	0.019	(0.004)	0.010	0.006	0.013	0.723	2.964	No
19.		<i>Website post on September 30, 2019.</i>								
	9/27/2019	\$ 7.56								
	9/30/2019	\$ 7.50	(0.008)	0.002	(0.004)	(0.003)	(0.005)	(0.300)	(2.833)	No

Date	Closing Price <sup>2</sup>	Stock Price Return <sup>2</sup>	Market Index Return	Industry Peer Index Residual Return	Predicted Return	Company-Specific Return	t-stat Company-Specific Return <sup>3</sup>	Critical t-value (Holm-Bonferroni)	Significant at 5% Level? <sup>4</sup>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
		((2)/prev(2)) - 1				(3) - (6)			
20.	Non-Financial Report 2019. Published March 13, 2020.								
3/12/2020	\$ 5.53								
3/13/2020	\$ 5.97	0.080	0.059	0.064	0.167	(0.087)	(4.867)	(3.055)	Yes

**Notes and Sources:**

Data were obtained from Nye Report, Exhibit 11B except where indicated.

Timestamps are given in Eastern Time where available.

<sup>1</sup> Price reactions based on the Nye Report, Exhibit 11B.

<sup>2</sup> Stock price data were obtained from FactSet Research Systems, Inc.

<sup>3</sup> Calculated as the daily company-specific return divided by the standard error of the regression over the sample period.

<sup>4</sup> Significance is based on the daily company-specific return's t-statistic. Significance levels have been adjusted to correct for multiple comparisons using the Holm-Bonferroni method, in which the t-statistics from a set of statistical tests are ranked from lowest to highest in magnitude, and the desired overall level of significance (5%) is divided by the rank to compute the p-value necessary for statistical significance.